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INSIDE DOPE

by GEORGE F. TAUBENECK

Story of the Week
Mistaken Identity
The Butler Hid the Body
Traffic Signal
How Time Flies!
Classic Retort
Diplomatic Language
Self-Protection Is the Mother of Invention
Candid Appraisal

Story of the Week

"Dope's" vacation this year was spent as follows:

(1) *Mornings*: in bed.
(2) *Afternoons*: at the local baseball park.

(3) *Evenings*: shooting the breeze with sports writers and ball players.

Having served a hitch as a sports writer two decades ago (and never having gotten over it) this was the most delightful sort of vacation. A complete change... yet, all the comforts of home. Travel holds no fascination for a businessman who has to do it in these days of over-crowded hotels, restaurants, and trains, and airlines smash-ups.

We heard some good stories, too, during the evening bull sessions. Shirley Povich from Washington, D. C., for example, tells one about the colorful "Bobo" Newsom, who recently left the Washington Senators to join the New York Yankees. (Old "Bobo" has pitched for six American League clubs and two in the National Circuit, and his "rubber arm" is still good.)

It seems that the late Kenesaw Mountain Landis, professional baseball's first High Commissioner, heard that Newsom likes to play the horses. To Landis, horse-racing was a sin of the first magnitude. So he called Newsom in for a "consultation."

"Bobo" argued that his betting was merely an innocent pastime.

"But how can it be innocent," thundered Judge Landis, "when it takes your mind off baseball? Let's say you've placed a ten-spot on the nose of some nag that's running at Arlington on an afternoon you're pitching. It's the eighth inning, the score is tied, and you're at bat. How can you concentrate on your job when you can't wait to hear the race results?"

"Mistuh Judge, suh," grinned Newsom, "if the score was tied in the eighth inning, I wouldn't be at bat."

Mistaken Identity

And then there was the case of the trainer who reported to Brooklyn's erudite Branch Rickey that one of his charges had developed a bone growth on his pitching arm.

"It's hard as a rock," verified the trainer. "Er, I can't think of the word which describes his condition."

"Ossified," Ricky supplied.

"Jeez, no!" ejaculated the trainer. "He hasn't had a drink all season."

The Butler Hid the Body

Next to the nonpareil Joe DiMaggio, the three main reasons for the torrid pace set by the New York Yankees in 1947 were three unexpected stars: recruit pitcher Frank Shea, sophomore catcher "Yogi" Berra, and cast-off first baseman George McQuinn.

Berra is strictly a "character" in the Ring Lardner tradition.

Last season his roommate was Bob Brown, who held down third base for the Yankees while studying for a medical degree at a southern university.

One afternoon when a scheduled

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Double-Barrelled Opportunity For Specialty Dealers: The Home Freezer

(An Editorial)

KEYSTONE of the home appliance business is specialty selling. That's because every new appliance must be pioneered. (A joint definition of "pioneering" and "specialty selling" might be phrased as follows: "Persuading people to buy something they didn't know they wanted.")

Anyway, the home refrigerator, range, washing machine, vacuum cleaner, water heater, etc. have all been transported into big-business volume through specialty merchandising methods.

Specialty selling is both an art and a science. It must be taught. (This interesting art and science, incidentally, is expounded in a book entitled "One Foot in the Door," which you can order through AIR CONDITIONING & REFRIGERATION NEWS for \$3.00 per copy.) Before specialty merchandising can be taught, however, you must find students to whom you can teach it.

Right now there are neither students nor teachers. Because the production of most home appliances hasn't caught up with demand, it's practically impossible to interest dealers in hiring and training salesmen nowadays. And it's even harder to interest young men in selling as a career.

To be sure, the better appliance dealers realize that before too many

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CLR Amendments Explain Restrictions Covering Recreational Installations

WASHINGTON, D. C.—Present restrictions on construction for recreational and amusement purposes, including those pertaining to the installation or relocation of air conditioning and refrigeration equipment, have been explained in detail by the government.

What sections of a building project to be operated partly for an amusement purpose and partly for some other purpose are covered by the Housing and Rent Act of 1947 and how to determine whether such a project is exempt under the small job exemption was made clear recently by the Office of the Housing Expediter.

Rules covering this situation are contained in recent amendments to the new Construction Limitation Regulation (CLR) issued under the Housing and Rent Act. Other amendments involve construction covered, application for construction permits, and the right to file an appeal when an application is denied.

In order to conserve critically-needed building materials now in short supply, CLR requires a permit

to construct buildings or facilities to be used for recreational or amusement purposes. The regulation became effective simultaneously with revocation of Veterans' Housing Program Order 1 on June 30.

Among other things, CLR covers the installation or relocation of the following items if they become an integral part of a building to be used for recreational or amusement purposes:

Air conditioning equipment (except self-contained individual units with no duct systems), furnaces and furnace burner or boiler burner units, kitchen cabinets, ventilating equipment, refrigerators, refrigerated showcases, soda fountains, and water coolers.

The regulation does not require a permit if the cost of the job does not exceed \$2,500. If the job consists of conversion to recreational, amusement, or entertainment purposes of a structure last used for residential purposes, the exemption is \$200.

As now amended, CLR contains a special rule covering cases in which

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Norge's Sales Convention Scheduled for January 3

DETROIT — Norge division of Borg-Warner Corp. will hold its first national sales convention since 1939 on Jan. 3, 1948, in Chicago, it has just been announced by M. G. O'Harra, vice president.

O'Harra said the meeting would be conducted in connection with the Midwinter Furniture Market which opens on Jan. 7. He pointed out that most of the distributors or their key sales executives usually attend the market, and that the time and the place, therefore, were logical. It will be held in the Continental hotel.

Since 1939, and with the exception of several war years, the company has held regional distributor meetings annually. This revival of the national sales convention is part of an over-all plan of sales activity.

He added that "1948 may be the 'showdown' year in the appliance business" and that "Norge intends to be ready for any market condition that may develop."

Frank X. Hamilton Gets Westinghouse Adv. Post

MANSFIELD, Ohio — Roger H. Bolin, manager of appliance advertising of the Westinghouse Electric Appliance Division, has announced the appointment of Frank X. Hamilton as supervisor of household refrigeration advertising.

Mr. Hamilton succeeds Col. F. E. Ross, who left the advertising post recently to join ALD, Inc., commercial distributor for Westinghouse laundry equipment.

The new household refrigeration advertising supervisor spent a number of years with the Young and Rubicam advertising agency and with the Dufaycolor Co. He joined Westinghouse in 1941 as sales application supervisor of the eastern district of the appliance division.

During the war, Mr. Hamilton served in the Naval Reserve as a gunnery officer on North Atlantic convoy duty, and later as an instructor at the United States Merchant Marine Academy, Kings Point, N. Y.

Detroit Dept. Store Instructs Buyers To Protest Price Rises

DETROIT—Crowley, Milner & Co., Detroit department store, has decided to do something about rising prices.

Buyers for the store have been instructed by Jay D. Runkle, vice president and general manager, to resist and protest all price increases after orders have been placed.

"If our backs are to the wall and we absolutely must have the merchandise, we may agree to a price increase, but always under protest," he warned.

Buyers in some departments have been told that when such increases occur, they are to re-buy the merchandise only if it is essential and if in their opinion it will sell at the higher price, reduce the quantity of the order, or cancel the order entirely.

"We are against further price increases," Mr. Runkle stated flatly.

"The public has had enough of them. Retailers and manufacturers of necessity must resist all further price increases to protect themselves against federal government investigations as well as to protect their profits, to say nothing of protecting the good will of their customers."

"We must work toward a more stabilized economy to which there will be a more even flow of merchandise without such violent price fluctuations. We cannot continue to operate satisfactorily in a crisis economy."

N.Y. Dealer Interest Rises In Market for Used Refrigerators

NEW YORK CITY—A growing awareness of the possibilities for selling reconditioned refrigerators in the local market has been detected among some department stores here by the *New York Times*.

Demand for used refrigerators among lower income groups is whetted by the scarcity and comparatively high prices of new units, according to the *Times*.

An executive of one large store indicated that many department stores would like to get into the reconditioned unit field, but are restrained from doing so "for obvious reasons."

"Profits would take an upward turn to a substantial extent, but practices which are accepted as common in the automobile industry simply cannot be used in department stores," he said.

An executive of a large home furnishings chain that is currently selling reconditioned units obtained from a servicing firm for from 30 to 50% less than comparable new refrigerators, stated, "There definitely is a large market for adequately reconditioned refrigerators and many retailers believe it is growing."

He stated, however, that shortages of new units were chiefly responsible for the response his firm has been getting to its infrequent offers of reconditioned units.

Many retailers and distributors apparently agree that the present shortage of new units is working a hardship on the reconditioned unit market because owners of used boxes are reluctant to part with them without being able to get a new refrigerator. They feel that when new units are plentiful again, the reconditioned market will expand.

Many appliance retailers, the *Times* indicated, are opposed to the sale of reconditioned refrigerators whether they are rendered salable by a servicing organization or by the store's own facilities.

Though these retailers are not planning to enter the reconditioned market this year, a spokesman said that as competition increased, they would "have to go in for it."

Locker Show Set To Open Sept. 22 In Kansas City

New Plant Standards and Frozen Food Sales Tie-Ins To Be Debated at Meetings

KANSAS CITY, Mo.—Few speeches but numerous discussions and clinics will mark the eighth annual convention of the National Frozen Food Locker Association here Sept. 22 through 25.

In conjunction with the convention there will also be exhibits by manufacturers and suppliers of the locker industry, sponsored by the Frozen Food Locker Institute, which will hold its annual meeting at the same time.

The exhibits will be open from noon to 6 p.m. the first three days, while on Thursday, the last day, the show will run from 10 a.m. to 4 p.m.

Both the show and the meetings of the locker association will be held in the Municipal Auditorium here. Meetings of the Frozen Food Locker Institute, however, are scheduled for the Muehlebach hotel, the group's headquarters.

Opening session of N.F.F.L.A. is set for 8 p.m. Monday, Sept. 22, in the Music Hall of the auditorium with President E. G. Spencer presiding. Registration will begin on Monday, and at 2 p.m. there will be a conference of state secretaries.

A memorial to the late Wayne Carver, editor of *Locker Operator*, and a discussion by Frank Miles, editorial director of that publication, on "The Locker Industry In the World Picture" will highlight the Monday evening session.

Things will get underway at 9:45 a.m. Tuesday morning with a general session in the Music Hall. At this session Larry Warner, president

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Doss Heads Sales of Hotpoint Kitchens

CHICAGO—Hollis C. Doss, formerly Kansas City sales manager for the appliance division of Enterprise Wholesale, Inc., has been made manager of the kitchen sales division for Hotpoint, Inc., and Frank L. Sacha, formerly executive representative for the company in Washington, D. C., has been named manager of Hotpoint's newly created water heater division. Both men will headquarter in Chicago.

Under Mr. Doss, an extensive planned kitchen merchandising and sales promotional campaign is now being developed to balance established production quotas of 100,000 automatic dishwashers and 25,000 garbage Dis-

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Date Selected for 6th All-Industry Exposition

PITTSBURGH — The Sixth All-Industry Refrigeration and Air Conditioning Exposition will be held in Cleveland during the week of Nov. 7, 1949, the board of directors of the Refrigeration Equipment Manufacturers Association has decided. (The Fifth All-Industry Show will be held Jan. 26-29 in Cleveland.)

The board stated that after an analysis of the different cities in the country where an exposition of this one's size could be held, it was felt that the rates and services were more advantageous in Cleveland than in any other city.

The board further noted that this date was not in conflict with any other expositions.



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Advertisements, Booklets, Demonstrations Herald Rochester Freezer Program

ROCHESTER, N. Y.—The Home Freezer Department of the Rochester Gas & Electric Corp. has been conducting an aggressive educational campaign in an effort to promote a better public appreciation of the value of home quick freezers.

The department conducted a series of demonstrations in the company's Home Service Auditorium during the month of August and there also were special displays and demonstrations on the sales floor.

Newspaper advertisements, radio spot announcements, and the company's monthly bulletin to consumers (with circulation of 158,000) were used to promote the demonstrations in the auditorium. The schedule follows:

Aug. 6—"How to Freeze Peaches, Lima Beans, and Chickens."

Aug. 13—"How to Freeze Bread, Sandwiches, Soups, and Kuchens."

Aug. 20—"The Freezer Makes for Easy Entertaining—Pies, Teas, Made-up Dishes, Leftovers."

Aug. 27—"For Economical Winter Meals Freeze Apples, Corn, and Meat Now."

These demonstrations were designed to show the multitude of ways in which a freezer will work for the average housewife. The meetings were free and were well-attended by men as well as women.

In addition to the demonstrations, a week was set aside with daily floor demonstrations of a freezer full of all kinds of frozen foods, including birthday cakes, cookies, canapes, sandwiches, bread, rolls, and kuchens as well as fruits, vegetables, and meat.

A booklet on home freezing of food and a folder on "Ready Made Meals from Your Home Freezer" were prepared by the company and distributed to the public. Home service department girls and salesmen were on hand to answer all questions.

The company did considerable preparatory work within its own organization before it launched the program. A talk illustrated by foods from the freezer, was given to all salesmen before making their calls.

The company's advertising department was invited to a breakfast at which food from the freezer was served. A talk was given on packaging materials, freezing of fruits, vegetables, meats, and cooked foods. Members of the advertising department were given first hand knowledge of freezer operation.

The program drew a very satisfactory response.

Rose White Represents 'Consumer Viewpoint' For American Kitchens

CONNERSVILLE, Ind.—American Central Division, Avco Mfg. Corp., producer of American Kitchens, has set a precedent in public relations by the appointment of a woman to its executive staff to represent its customers.



Miss R. V. White

The woman, Miss Rose V. White, whose work will be customers' representative, is a home economist of Purdue university graduate school and an authority on kitchens. She assumed her duties Sept. 1.

In test kitchens set up in the plant, Miss White will endeavor to duplicate conditions in customers' kitchens and develop additional ways in which American Kitchens equipment may be adapted to step saving practices.

Miss White will also test all new equipment before it is released for sale on the market to determine whether it will serve the customers' needs for which it was intended.

All plans for proposed new products will also be submitted to Miss White before they are put in work to determine whether there is a customer need for the projected product and if so whether it will fully serve that need.

Miss White will also have a voice in the composition of all future advertising of American Central. Before release of national advertising it will be submitted to her criticism. By this means it is hoped to gain the benefit of the woman's point of view and strengthen the customer appeal of all advertisements.

After receiving her degree of bachelor of science in home economics at the University of Tennessee, Miss White was engaged as home demonstration agent in Arkansas.

During the war she served for three years in the Waves attaining the rank of lieutenant, junior grade before her discharge in 1946. Much of her service was as manager of the officers' mess in Hawaii.

Miss White received her master's degree from the Purdue Graduate School where she majored in household equipment. She has done extensive magazine writing and radio work.

Distributor Gets 60-Day Notice on Price Cuts In Extended Proctor Policy

PHILADELPHIA—An amplification of Proctor Electric Co.'s merchandising policy to include price protection in the event of a downward price revision has been announced by Robert M. Oliver, vice president in charge of sales.

It is the intent of the company, as stated in its published policy (which stresses the fair merchandising practices to which the company has pledged itself) to give distributors, through whom it distributes its products exclusively, advance notice of model changes to permit an orderly disposal of inventories. This policy has now been extended to include price reductions and is defined to mean a minimum of 60 days notice.

When questioned as to why Proctor had so amplified its policy, inasmuch as it is introducing new postwar models and products to consumers this fall, Mr. Oliver made it clear that the company had been asked for an interpretation of its policy in this regard, and he had been glad to give it. He further stated that it was the company's policy to "put everything on the line" so that all concerned with the merchandising of Proctor products would know where they stood in the merchandising scheme.

"The fact that Proctor has chosen this time to introduce new models and is backing them with the largest national advertising campaign in the history of small appliances is a pledge of confidence in the future," said Mr. Oliver. "We believe prices will hold reasonably stable. We, at Proctor, have a quiet, calm, unflinching, unhurried confidence in the future of the United States."

"A knowledge of where we stand, how we intend to back up our distributors and retailers in true partnership fashion, is tangible evidence of our faith. It will permit all intimately concerned with the merchandise of our products to do business with a free and easy mind."

In a letter addressed to its hundreds of franchised distributors from coast to coast, the mechanics of this protection was given as follows:

"Should a downward price change be necessary before expiration of the 60-day advance notice period, distributors will receive the full difference between their original cost and their new cost on any inventory of affected Proctor products in distributors' or dealers' stocks up to total quantity purchased during the period of 60 days prior to the effective date of price reduction."

"The Proctor Electric Co. will accept billing for this difference from franchised distributors upon receipt of proof of credits issued by distributors to their retailers in implementing this policy and proof of distributor inventories of Proctor products in accordance with the foregoing paragraph of this letter."

"Credit memoranda for goods in transit from Proctor factory to distributors will be issued automatically."

Daniels Joins G-E Office

PITTSBURGH—A. R. Daniels has joined General Electric Supply Corp. here as sales and advertising manager. Mr. Daniels replaces John Griffin, who has been promoted to manager of the downtown Pittsburgh area, including Kaufmann's department store, and jewelry stores.

Minneapolis Dealer Succumbs

MINNEAPOLIS—E. B. (Gene) Kelly, local appliance dealer and electrical contractor, succumbed to a heart ailment recently.

Mr. Kelly had been active in both the Minneapolis Appliance Dealers and Electrical Contractors associations for many years. He had been in business here since 1916.



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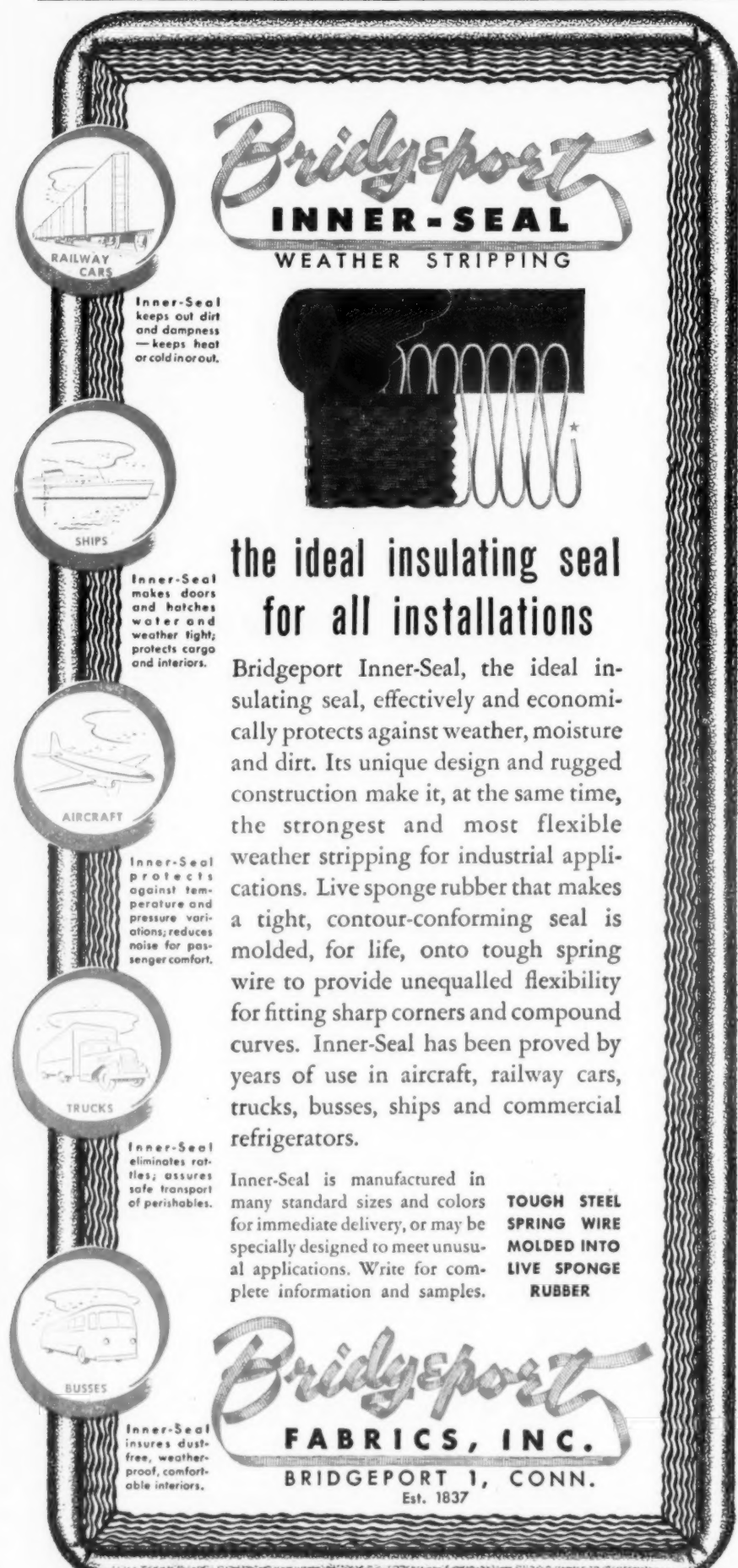
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It's the only control with all these advantages "in one package":

Set it and forget it!

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Quick Capacity Change • Easy-to-change Pressure Limit

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EXPORT DEPARTMENT—Box 218, Ridgefield, New Jersey

Standard Washer Sales Drop; Portables Gain

CHICAGO—Factory sales of standard size household washing machines in July amounted to only 25% of June sales and were about 50% below July, 1946, the American Washer & Ironer Manufacturers' Association has revealed.

Comparative figures were 81,826 in July, 314,705 in June, and 166,559 in July, 1946.

Portable washer sales, on the other hand, showed a slight increase over June, going up from 34,316 to 36,471. These units, having a capacity of 3 lbs. dry weight or less, are being reported for the first time this year.

The 41,911 ironers sold in July amounted to 20% less than the 52,025 sold in June but were many times greater than the 7,646 sold in July last year.

U.S. Appliance Ban Invoked In Australia

CANBERRA, Australia—Australia is the latest addition to the list of countries prohibiting the import of certain U. S. appliances.

As a part of its dollar-saving program, the Dominion will no longer grant licenses for the import from dollar areas of 32 categories of goods, including household electric irons, clothes washing machines, and electric stoves.

Customs Minister Ben Courtice, in announcing the banned items, said his country may find it necessary to impose restrictions on other commodities in the near future.

Powerless To Curb Radio Price Cutting, G-E Says

SYRACUSE, N. Y.—Price cutting on General Electric radios is something that the General Electric Co. cannot control, A. A. Brandt, general sales manager of the company's electronics department was reported as having stated last week.

"The General Electric Co.'s electronics department has no control over retail prices of the merchandise it manufactures," he stated. "The department sells this merchandise to distributors and it then becomes their property. In turn distributors sell to dealers. Each conducts his own business as he sees fit."

Mr. Brandt's statement followed reports that the premium division of a Chicago store recently promoted General Electric radios at as much as \$60 below list price and generally running from 30 to 40% lower than list.

Mr. Brandt noted that G-E radios are not fair traded and that the company could take no legal action against retailers who failed to adhere to the company's recommendation that suggested retail prices be followed.

He declined to say whether the company was planning any other action.

Dealers and distributors not handling G-E products noted that radio manufacturers can effectively handle dealers who cut prices by withdrawing supplies from the distributors who serve them.

This is the way the Chicago store slashed prices on G-E radios:

Item	List	Store Price
Self-charging portable	\$139.50	\$79.50
Clock radio	31.95	21.95
Table model		
radio-phonograph	119.95	77.50
Three-way portable	55.75	39.50

\$1,866,446 Yearly Profit Shown by Motor Products

DETROIT—In reporting a profit of \$1,866,446 for Motor Products Corp. for the fiscal year ended June 30, A. L. Lott, president, said the Deepfreeze Division is operating at a profit despite the difficulty of obtaining sheet steel.

Although Deepfreeze had no prewar standing with the steel companies for allocations, it is now operating at 50% of capacity, Mr. Lott pointed out. He said Motor Products was able to meet customers' schedules in spite of the sheet steel scarcity.

It was noted that the corporation is now operating four plants, which have approximately 1.1 million square feet of combined floor space. This was said to represent an increase of nearly 40% over the prewar area.

This fiscal year's profit compares with \$119,480 for 1946 and \$708,808 for 1945. It is equal to \$4.78 per share before special credits, compared with 31 cents for 1946 and \$1.82 for 1945.

Net sales for the year amounted to \$36,729,638. Net sales for last year totaled \$16,844,613 and those for 1945 \$23,980,792.

Retailers Report Record Sales, Sagging Profits

NEW YORK CITY—Record sales and sagging profits are reflected in the half-year reports recently issued by leading retail merchandising corporations.

High operating costs and large inventory markdowns, charged to current operations, were scored as causing the profit decline during the first half of 1947, which in some cases went as far as 50%. A few organizations, such as Sears-Roebuck and Butler Bros. showed profit gains.

Profit margins had begun to slump in the third quarter of 1946 and successive heavy markdowns since then depressed them further.

Sales and profit figures from reporting companies follow:

Company	1947	1946	1947	1946
	Per Share	Profits	Sales (in mil.)	Profits
Aldens	\$0.37	\$2.11	\$35.7	\$30.1
Associated Dry Goods	0.61	2.71	62.2	61.9
Butler Bros.	1.41	1.00	7.9	5.8
Consolidated Stores	1.06	2.71	14.8	15.2
Federated Dept. Stores	1.51	2.50	134.1	118.9
Franklin Simon	0.18	1.99	8.0	6.3
Interstate Dept. Stores	1.02	2.51	28.1	23.3
Marshall Field	2.31	3.48	95.7	88.6
J. C. Penney	1.33	2.17	322.0	284.3
Sears-Roebuck	1.71	1.64	909.6	728.1

In New Posts



Frank L. Sacha



Hollis C. Doss

Hotpoint Names --

(Concluded from Page 1, Column 5)

posals during 1948. Starting with a nucleus of more than 250 dealers who now maintain their own kitchen planning organizations, decentralization of this company headquarters function will be accelerated in order to meet the growing demand for planned kitchens.

The new water heater division, headed by Mr. Sacha, was created to facilitate merchandising of greatly increased production on this appliance which is scheduled to reach 250,000 in 1948, or approximately five times the number sold in 1941.

20% Steel Delivery Cut Forecast In 4th Quarter

NEW YORK CITY—Cuts of approximately 20% in fourth-quarter steel mill deliveries are being predicted here by steel warehousemen, who say the cut is made necessary by the need for much delayed repairs and reconditioning of mill equipment.

The new reduction in steel deliveries is expected to reduce to a record low the warehouse supplies of New York's old established companies, spokesmen for warehousemen said.

No blame for the new cut has been placed on the mills, who find it necessary to reline furnaces and recondition other equipment which has been operating at peak load in an effort to keep up with demand. Despite the belief of mill forecasters that steel demand would slacken during the fourth quarter, the distributors report increased demands, with future orders being placed for steel to be delivered without any specified delivery date.

Steel warehousemen claim now to be living from "hand to mouth," and facing the certainty of having to cut back promised deliveries.

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INSULATED WITH SANTOCCEL

PRODUCT OF MONSANTO CHEMICAL CO.

When you see the Santoccel seal on a freezer, you know that the manufacturer is capitalizing on the biggest attraction in the rich freezer market today—increased capacity.

You see, the unprecedented insulating properties of Santoccel mean 40% to 60% more storage space within the same overall dimensions as the average sized freezer.

If you produce any kind of refrigerating equipment, it will pay you to find out how the Santoccel seal on your units will mean more sales appeal, more profits, through increased capacity.

For technical information and engineering cooperation, write: MONSANTO CHEMICAL COMPANY, Merrimac Division, Boston 49, Massachusetts.

Santoccel Reg. U. S. Pat. Off.



Housing Reservation Setup Streamlined To Handle 5th All-Industry Exposition

PITTSBURGH—Everything possible is being done to arrange adequate housing to accommodate everyone attending the Fifth All-Industry Refrigeration and Air Conditioning Exposition in Cleveland, Jan. 26-29, according to F. J. Hood, chairman of the show committee.

Housing plans are based on experience gained in 1946 in handling the tremendous crowd which attended the Fourth All-Industry Show. After consulting with hotel managers and housing authorities in Cleveland after that exposition, the board of directors of the Refrigeration Equipment Manufacturers Association, sponsor of the show, decided to handle all hotel reservations in 1948 through the Cleveland Convention and Visitors' Bureau.

"I think that we can assure that anyone placing reservations by about the first of October need not worry about accommodations for January," Mr. Hood said. "However, those persons who do not make reservations until the last minute for one reason or another may encounter some trouble."

Wayne Stetson, manager of the Cleveland Convention and Visitors' Bureau, has reported to REMA that in order to handle the housing task with the greatest efficiency and speed possible, the bureau is operating a housing service to function solely for the Fifth All-Industry Show. This department is processing and assigning all hotel rooms.

"The plan of clearing all reservations through this one central agency has proven very effective for other large industrial shows in Cleveland," Mr. Stetson declared. "It will assure the most effective use of the hotel space."

Mr. Hood announced that in October the 1948 Show Committee will meet in Cleveland with representatives of REMA, RSES, and NARC, at which time individual hotel assignments will be made.

New show exhibitors, not previously announced, include Primor Products, Inc., and Evans Mfg. Corp.

NARC Group Mapping Model Licensing Code For Cities, States

CLEVELAND—Progress is being made toward a suggested model licensing regulation for cities or states by a special committee of the National Association of Refrigeration Contractors of which A. C. Ellerbusch, Detroit, is chairman.

N.A.R.C.'s recent survey of 132 representative cities showed that only 6% have a licensing regulation to assure that refrigeration installations and service work are performed by qualified refrigeration contractors.

Checks have indicated, also, that considerable work is being performed "on the side" by mechanics with little or no responsibility for the welfare of users, as well as the safety from personal and property hazards incident to installations and service, the Contractors Association declares.

One of the controversial points encountered was whether or not mechanics should be licensed, as well as refrigeration contractors.

The N.A.R.C. committee finally reached the decision to recommend that only refrigeration contractors be licensed. This will make a more clear cut, simple, and effective regulation. It will confine things to contractors who, after all, have in their hands the sole responsibility for proper work; and it will make for a better and more impartial examining board with less tendency to inject politics into the picture on licensing and inspections.

Further, it is stated, it will decrease the tendency of mechanics to do work "on the side," thus competing in a back-handed, underhanded way with their own employers, disrupting the market to some extent, and doing work that so often is not satisfactory nor safe, with a guarantee that means nothing.

The suggested regulation will also provide for a competent Examining Board, Inspection Department, permits for work, and bonding of refrigeration contractors.

Firm Test-Markets New Vacuum-Sealed Food Bag

NEW YORK CITY—Standard Cap and Seal Corp. here is conducting research on a new plastic, vacuum sealed bag for food products. Known as Flex-Seal, the container is now being test-marketed by Armour & Co. on half-pound bacon packages.

Further tests are planned, which include fresh meats.

The new bag contains a window through which the purchaser may view the contents, the manufacturer points out.

Experiments with other products, such as frozen fish, natural cheese, and peanuts, are being carried on by the manufacturer, according to Herbert T. Holbrook, sales manager of the Flex-Seal division.

U. S. Appeals for Mechanics, Engineers To Serve Overseas

WASHINGTON, D. C.—Uncle Sam needs air conditioning and refrigeration mechanics and engineers for service overseas, Charles W. Claxon of the repairs and utilities division, chief of engineers office, U. S. Army, has announced.

Pay rates ranging from \$1.49 to \$1.83 per hour for mechanics and salaries of \$6,127.50 per year for engineers are offered, Mr. Claxon said.

Mechanics can apply for positions at Adak in the Aleutian Islands, Puerto Rico, Bermuda, Guam, or Japan. The engineers will be stationed in Japan.

Minimum tour of duty is one year in Guam and Adak and two years in the other locations, Mr. Claxon stated.

Quarters and subsistence provided by the War Department will cost between \$45 and \$90 depending upon location, he added. However, dependents may not be taken along.

Persons interested in the following

Position	Rate of Pay	Location
Refrigeration mechanic	\$1.76 per hour	Adak
Refrigeration mechanic	\$1.83 per hour	Puerto Rico
Refrigeration mechanic	\$1.74 per hour	Bermuda
Air cond. & refrigeration mechanic	\$1.72 per hour	Guam
Air cond. & refrigeration mechanic	\$1.64 per hour	Guam
Refrigeration mechanic	\$1.64 per hour	Guam
Foreman, refrigeration mechanic	\$1.55 per hour	Japan
Refrigeration mechanic	\$1.49 per hour	Japan
Refrigeration, heating, and ventilation engineer	\$6,127.50 per year	Japan
Refrigeration engineer	\$6,127.50 per year	Japan

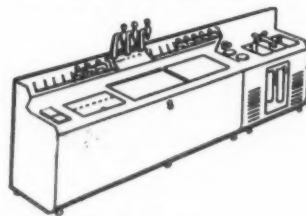


Almost anybody can claim "an original" of some sort ... but the important originals are those that really contribute ... that provide a new and better way of accomplishment ... that are universally accepted ... like the many features, originated and developed by Weber ... that have proven their worth in thousands of installations ... have shown the way to others!

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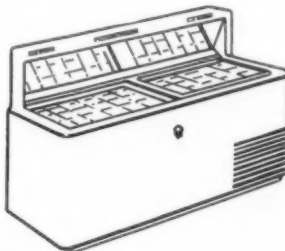
WEBER SODA FOUNTAINS

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- Toe Recess
- Stainless Steel Jar-Pumps and Fruit Jars
- Perfect Operational Balance Point
- Roll-A-Doors
- Table Like Work Space
- 35% Greater Ice Cream Capacity



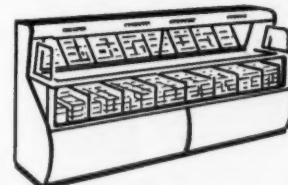
WEBER ROLL-A-DOOR FROZEN FOOD AND ICE CREAM CABINETS

- Roll-A-Doors
- Patented Defrosting Track
- Greater Visibility
- Easier Access
- Drawer Type Compressor Units



WEBER FROZEL LOW TEMPERATURE SELF-SERVICE CASES

- Heated Arm Rail for Customer Comfort
- Greater Package Capacity Per Foot
- Temperatures of Zero or Below
- Brilliant Illumination
- Dry Inviting Appearance at All Times
- More Display



WEBER STANDARD TEMPERATURE SELF-SERVICE CASES

- Stainless Steel Cases for Vivid Merchandise Display
- Toe Recess for Shopping Convenience
- Split-Current Full-Flood Gravity Type Coil
- 5 Position Rack Adjustments
- Lower Coil Surface...Less Pressure Drop
- Automatic Defrosting

WEBER SINGLE AND DOUBLE DUTY MEAT CASES

- Stainless Steel Case for Vivid Merchandise Display
- Toe Recess for Shopping Convenience
- More Display
- Greater Visibility
- Features Originated and developed by Weber

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EQUIPMENT FOR SALE

Air conditioning units consisting of 1/2 hp Bishop-Babcock Compressor Body made for B & B by Servel Refrigerator Co.

1 16" X 24" Kramer Double row condenser.

1 3 1/2" X 14" heavy duty receiver with safety plug and test cock with approximately 5 lbs. of "Freon."

1 Detroit Lubricator 2 ton Expansion valve.

1 Peerless Thermac evaporator blower unit cooler 12" X 24" X 6".

10 ft. each of 5/8" and 1/2" tubing with vibrator eliminator attached.

Compressor body base attachable to automobile motors.

Also 60 other items including bolts, nuts, bases, and brackets.

These units were built for Chrysler Corp. to condition their Chrysler cars.

All the above equipment is new. Cost approximately \$300.00. Prices \$70.00 F.O.B.

These units are knocked down in shipping crates weighing approximately 200 lbs.

GEORGE SPECTOR

CA 5125

675 Gratiot Ave., Detroit, Michigan

INSIDE DOPE

by **GEORGE F. TAUBENECK**

(Concluded from Page 1, Column 1)

game had been rained out, the two read quietly for hours up in their hotel room. Berra flipped the pages of two westerns and a "whodunnit" while Brown studied a long treatise on "Fractures of the Fibula."

With a sigh, Brown closed his highly technical book. Berra looked up interestedly:

"How did it end?" he asked.

Traffic Signal

One of the best infielders in the American League is celebrated for two natural endowments: (1) his ability to hit a long ball, and (2) his ability to consume huge quantities of bourbon.

After hitting two home runs, three doubles, and a triple in a double-header in his home city, this diamond celebrity decided to relax by indulging in his favorite pastime (elbow-bending). Arriving at a favorite bar, he was immediately introduced to the crowd.

Everybody there wanted to buy him drinks—and did. Along about 1 a.m. he decided that it was time to go home. As he wove unsteadily to a standing position, the bartender said:

"Let me drive you home, Slugger."

"Not on your life. I'm all right, and I'll drive my own car home, thank you."

"Mind if I go with you?" asked a pal.

"Shertainly not. Of coursh. Come right along."

So they located the Slugger's auto, maneuvered it onto the street, and started out.

"H'mm," observed the Slugger. "There's a car going my way. Lesh follow his tail-light."

Silently the ballplayer and his pal followed the pace-setting car ahead. They got along fine, too; except at one time the Slugger growled:

"He's keeping too close to me."

At that moment the Slugger's car crashed into the vehicle up ahead.

Wearily the Big Boy of Baseball got out to confront the driver of the car he had just smashed.

"Whassha matter with you," he complained. "Why didn't you hold out your hand?"

The other fellow was astonished.

"Hold out my hand," he echoed. "But why should I? I'm in my own garage."

How Time Flies!

Stan Spence, the Washington centerfielder who makes difficult catches look easy, always seems to hit like a demon in Detroit's Briggs Stadium. He loves that park.

His hitting prowess in Detroit, however, has occasionally caused some of the Tigers to forget that he has a wonderful arm. Stan can throw strikes to the home plate from any angle.

In one game Eddie Mayo of the Tigers was on third when Bob Swift hit a long fly to Spence, who promptly nipped Mayo at the plate.



"Well, what did the boys say when you told them we were going to work overtime tonight?"

Cried Mayo to catcher Mancuso of the Senators:

"He couldn't do that again in a month of Sundays."

Three innings later Spence again threw out Mayo when he attempted to score on Eddie Lake's long single.

Grinned Mancuso:

"Boy, oh boy; how time flies."

Classic Retort

Billy Evans, general manager of the Detroit Tigers, has an ideal background for his job. He has been a player, umpire, coach, manager, and front-office executive during his career in major league baseball.

As an umpire, he was acknowledged the best of his time. And his two books on baseball arbiting are the Law and the Prophets of the profession.

One sunny afternoon Billy called a third strike on a hero who was then leading the league's hitting averages in everything but foul flies.

Bawled the struck-out batsman:

"Evans, you missed that one."

"Humph," rejoined the umpire, "If I'd had a bat I couldn't have missed it."

Diplomatic Language

When Evans was managing a minor league club, he had a young pitcher on the roster who showed signs of great prowess. His fast ball had a hop on it, and his curves had zing.

Unfortunately, this Great Prospect had one weakness: women. Again and again, the night before he was scheduled to pitch, the curly-haired hurler would meet a waitress, a bobby-soxer, or even a college co-ed—and be missing for days.

At odd intervals, this Byron of the Diamond would reappear and toss a beautiful game. You can see why he drove Evans to distraction. He couldn't manage him, and he couldn't manage without him.

Late in August, the skirt-chasing pitcher seemed ready to settle down. Within a two-week's stretch he hurled four successive shut-outs, during which he struck out 37 batters.

News of this fantastic feat reached headquarters of the big league club which owned an option on the erratic southpaw. So they recalled him. At the same time, sportswriters asked Evans for a "line" on this lad.

Sensing what might happen when the girl-crazy pitcher landed in New York, and not wishing to run afoul

of the libel laws, Evans wrote:

"When you get acquainted with this pitcher as we are acquainted with him, you'll appreciate him like we do."

P.S.: The strike-out artist never pitched a game for the claimant club. At last report, he was en route to the West Indies with an heiress.

Self-Protection Is the Mother of Invention

Evans likes this story:

In the second game of a double-header against Cleveland, El Senor "Goofy" Gomez came to bat in the sixth inning.

Bob Feller was on the mound for the Indians, and he had rocketed that fast ball past Yankee batters with great effectiveness throughout the first six frames.

It was getting dark.

When Gomez arrived at the plate, he struck a match.

"What's cookin'—can't you see Feller?" cracked Frankie Pytlak, the Cleveland catcher.

"I want to make sure," stated Gomez, "that Feller sees me—and where my head is!"

Candid Appraisal

Another Billy Evans yarn:

Working behind the plate in Chicago one afternoon early in May, Evans watched the offerings of a recruit pitcher who had arrived in the "majors" with a big reputation and a swelled head.

When this conceited rookie came up to bat in the third inning, Evans asked him:

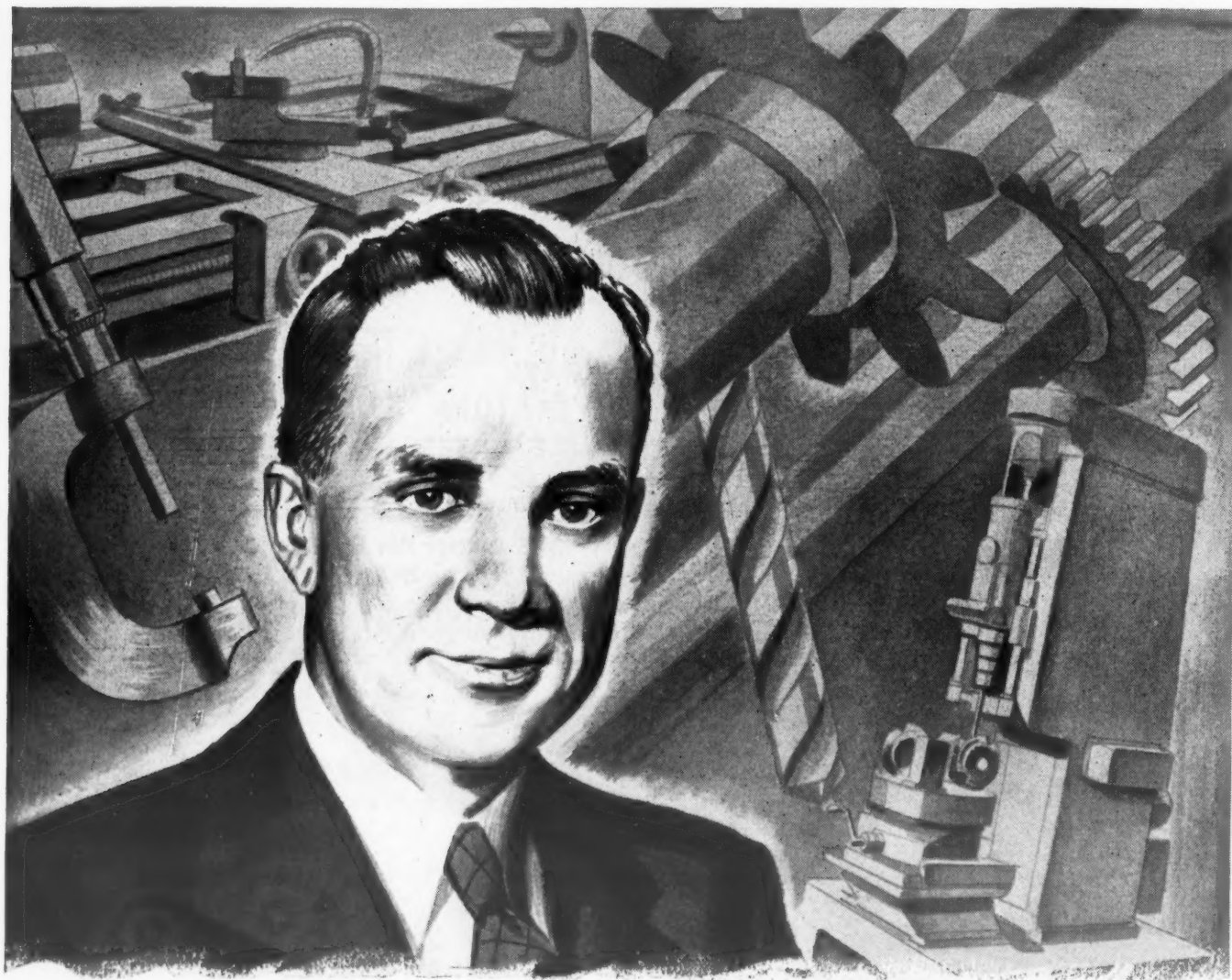
"Have you thrown your fast ball yet?"

"Why, of course. I've used it on every batter."

"Thanks, sonny," replied Billy cheerfully, while deflating his air-pocket chest-protector. "If that's all the 'swift' you've got, I won't need this."

That deflated the rookie pitcher, too, and he was knocked out of box in the next inning. He wasn't knocked out of the league, however. The cocky lad was "Lefty" Grove.

(To Be Continued)



MEN ARE THE MEASURE OF A COMPANY'S SUCCESS

Ray W. Herrick, President, is one of the founders of Tecumseh Products Company. Among his chief personal assets are a boundless energy, a flair for friendship, and a passion for perfection. To his company he brings a wealth of experience in production and precision tooling acquired during the pioneer days of the automotive industry. According to outside sources, "he's one of those rare birds who doesn't know what the book says can't be done . . . so he goes ahead and does it!"

Primarily a mechanic who rather likes to get his hands dirty, he holds among his cardinal beliefs the firm conviction that standard machine tools plus special precision tooling provide greater flexibility and higher output of better products at lower cost. His plant is a model of his methods, vindicated by results.

Coupled with his mechanical abilities are a few sound ideas on the financial side of business management. Tecumseh's firm footing in the refrigeration industry is due, in large part, to Herrick's policy of "plowing" a large part of each profit dollar back into the business.

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Large Hotels Plan To Spend \$90,000,000 On Air Conditioning, Refrigeration By 1950

CHICAGO — The nation's larger hotels are expected to write checks totaling around \$90,000,000 to the air conditioning and refrigeration industry during the coming three years.

According to a recent survey, U. S. hotels are planning to spend at least \$84,480,000 for new air conditioning equipment, \$2,981,000 for new refrigeration equipment, and \$2,196,800 for new model storage refrigerators.

Furthermore, the survey takers claim, the hotel people will dip into their coffers to the tune of more than \$1,500,000 for new bar and cocktail-lounge equipment and nearly three-quarters of a million dollars for new service bars.

These markets are due to be created by a \$382,000,000 country-wide rehabilitation program being launched by hotels with 100 or more rooms. Since the survey—described as one of the most comprehensive studies of the hotel industry ever undertaken—did not cover smaller hotels, purchasing figures are considered to represent "a very conservative estimate."

The survey was made for *The Hotel Monthly* by C. C. Chapelle Co., marketing consultant. Results are contained in a 100-page report just issued by the publication.

Chapelle arrived at the market potentials by projecting the findings of trained investigators who obtained 200 personal interviews with owners and operators of Class "A" and "B" hotels in 45 cities in 17 states. Only hotels with 100 or more rooms (numbering 3,994) were included in the study because they account for most of the hotel business.

Eighty-eight per cent of these hotels—or 3,515—are planning to spruce up their properties, and seven out of every 10 of this group—or 2,355—will make changes in their engineering departments, it is predicted. An estimated \$140,574,000 will be paid out for engineering changes, including new air conditioning, refrigeration, heating, laundry, and distribution and control equipment and elevators.

By far the greatest market in the equipment field will be for air conditioning, according to the study.

Of those planning renewal of engineering departments, 69%—or 1,625 hotels—will install new or additional equipment of this type. Of this group, 36% will install central systems, 27% unit systems, 6% both kinds, 4% other systems (decentralized, multiple, water), with 27% undecided, the survey discloses.

"In estimating air conditioning expenditures we have used the figure of \$400 per ton and have divided the load 50% for air conditioning guest rooms and 50% for air conditioning public rooms and food and beverage departments," the survey report explains. "We have further estimated that an average guest room would require six-tenths ton for air conditioning, which would make the cost per guest room about \$250.

"Using a mean average in the various size groups and allotting one-half of the cost to guest rooms and one-half to other departments, the cost of air conditioning per hotel will range from \$37,500 in the 100 to 199-room group (average 150 rooms) to \$125,000 in the 500 and more room group."

On this basis, the following breakdown was made on the number of hotels in each size group that will purchase new equipment and the

amounts they are expected to spend:

No. of Rooms	No. of Purchasers	Will Spend
100-199	672 (28%)*	\$25,200,000
200-299	313 (41%)*	22,692,500
300-399	97 (27%)*	8,487,500
400-499	92 (46%)*	10,350,000
500 and over	142 (54%)*	17,750,000
Total potential volume		\$84,480,000

*Represents per cent of total hotels in this size group.

In reporting its estimate of the refrigeration equipment market, the survey firm notes that the amount of such equipment "varies greatly with the individual hotel" and that "many factors have to be taken into consideration in addition to the number of rooms.

"For purposes of this study, and in consultation with authorities in this field, it is estimated that the cost of refrigeration equipment, including compressors and installation costs, would be \$1,500 for hotels

with 100-199 rooms, \$2,000 for the next size group, \$3,500 to \$7,500 for hotels with 300 to 499 rooms, and \$20,000 for hotels with 500 or more rooms, based on 1946 prices."

Here is the analysis of this market:

No. of Rooms	No. of Purchasers	Will Spend
100-199	488 (19%)	\$ 672,000
200-299	98 (13%)	196,000
300-399	48 (13%)	168,000
400-499	46 (23%)	345,000
500 and over	80 (31%)	1,600,000
Total potential volume		\$2,981,000

Besides overhauling their engineering departments, U. S. hotels are going to do something about their food and beverage departments. Seventy-seven per cent—or 2,707 hotels—plan to fix up this section, it was discovered. Of this number, 71%—or 1,922 hotels—will buy new kitchen equipment. And of this 71%, 69% are said to consider new storage refrigerators most needed.

The analysis of this market is accompanied by an explanation that storage refrigerators, including compressors and cooling coils, for the kitchens were estimated at 1946 prices as follows:

Hotels with 100 to 299 rooms, a two-compartment unit at \$1,800; hotels with 300 to 499 rooms, a three-compartment unit at \$2,500; and the largest hotels, a larger unit at \$3,400.

"It is, of course, understood that some large hotels, or even smaller hotels, catering to an extensive food and beverage business will need a greater amount of refrigerator storage space than here estimated, but these estimates are average and have no reference to any individual hotel," it is added.

Following is what the survey turned up:

No. of Rooms	No. of Purchasers	Will Spend
100-199	504 (21%)	\$ 907,200
200-299	181 (24%)	325,800
300-399	157 (43%)	392,500
400-499	83 (41%)	207,500
500 and over	107 (41%)	363,800
Total potential volume		\$2,196,800

In addition to earmarking funds for new refrigerators, the hotels indicated they will pay out substantial sums for remodeling and adding rooms to food and beverage departments. A total of 1,272 plan to remodel and 677 are going to add rooms to this extent:

Remodeling	Additional Rooms
Dining rooms	35%
Cocktail rooms	35%
Kitchens	21%
Rearrange floor space	17%
Coffee shops	26%
Miscellaneous	5%

(Note: Totals exceed 100% as some hotels plan more than one type.)

Investigators learned that money spent for equipment for new bars and cocktail lounges probably will be divided about as follows:

Rooms	Purchasers	Will Spend
100-199	393 (16%)	\$ 461,775
200-299	143 (20%)	173,900
300-399	97 (27%)	320,100
400-499	28 (14%)	92,400
500 and over	84 (32%)	535,500
Total potential volume		\$1,583,675

Further, a number of hotels will buy new service bars for their dining rooms, coffee shops, etc. Here is how this money will be paid out, assuming that the bars will cost on the average from \$1,500 to \$3,500 each:

Rooms	Purchasers	Will Spend
100-199	169 (7%)	\$253,500
200-299	115 (15%)	230,000
300-399	36 (10%)	72,000
400-499		
500 and over	53 (20%)	185,500
Total potential volume		\$741,000

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The Koch Reach-In 25 cu. ft. refrigerator is now available with or without the convenient ICE-MAKER.

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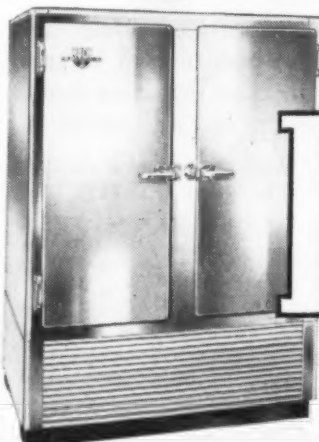
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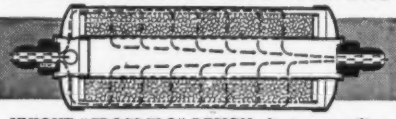
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UNIQUE "CROSS-FLO" DESIGN eliminates rolling, dusting and packing of drying agent, which eliminates pressure drop, clogging, poor refrigerant control performance and expensive call backs—permits installation in liquid line, suction line or between refrigerant control and evaporator.

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Merchandising of Room Air Conditioners

*A Veteran of the Field Analyzes the Faults of
Past and Present Methods as He Sees Them*

Remington Corp.
Cortland, N. Y.

Editor:

Have just returned from the mountains, where I've been catching up on my "home reading" and want to thank you very much for your July 21 "Let's Hear no more about Room Coolers" editorial. One of its direct results is that, in our new promotional material, we will immediately feature the theme: "Better Health through Better Air."

Attached is a list of 17 benefits which a good room air conditioner brings to the office occupant—and another list of 17 benefits which it brings to the home. Any appliance capable of delivering all these benefits, and more too, should certainly be called a room air conditioner and not a "room cooler"—an expression which has always been banned, here at Remington.

Single room air conditioners of the water-cooled type were first put on the market in 1932; air-cooled units came along two or three years later. So there is now enough historical background in this field that it should pay us frequently to "look at the record." As one who has been closely associated with it since its very start I believe it may be helpful to indulge in a little self-criticism of what we can call "The Room Air Conditioner Industry."

Incidentally, these appliances were initially not called room coolers, but

"Portable Air Conditioners." Twelve years ago they promised us great things. Did they keep these promises? Obviously not.

In the hope that not only you, but others as well, may help to carry the ball of self-criticism I will kick off, by mentioning just a few of the ways in which the portable air conditioner—or those who sold it—fell short of meeting its promises; reasons why we have created a larger back-log of dissatisfied customers than we would care to admit, and unquestionably some presently disinterested dealers as well.

TERM 'PORTABLE' A MISTAKE

1. It was a mistake ever to have featured the irrelevant word "portable." This expression did not inspire confidence in the mind of the owner, once he discovered that his air conditioner was actually less portable than his grand piano.

2. "Just plug it in like a radio" is another slogan that has accounted for many a blinking light, many a blown fuse, many a disgruntled owner. Special electric circuits are always provided for electric ranges; should be provided for all home air conditioners that draw 1,000 watts, or more, and frequently for smaller units as well. (Horsepower ratings are misleading in this respect. Remember the "Half-horse" job put out which drew—according to their service manual—1,430 watts or

1.15 HP at the lowest motor efficiency it is reasonable to assume?)

3. Still with us today are the over-optimistic claims as to the "quiet," "silent" and "noise-less" operation of our units. Yes, our units are indeed "noise-less," when compared with an out-board motor or a "jack-hammer"; otherwise not. The development of an economical full-sized air-cooled unit with a really low noise-level is the most difficult technical problem still confronting the engineers who are responsible for the design of room air conditioners.

4. Then, back in 1940, '41, and '42, there was the "third-horsepower" fiasco. Two industry "big names" and several small ones put out thousands of these undersized units. Why aren't they putting them out now? What happened? Did they "popularize" room air conditioners or is the industry today still suffering from residual buyer resistance which they caused?

SELLING INADEQUATE UNITS?

The industry, of course realizes, now, that the 1/2-hp. unit was just a bad mis-conception. But aren't we still, to a lesser degree, continuing to create additional customer dissatisfaction by selling units that are functionally inadequate?

5. Finally, there is the \$64 question: "How large a room will it cool?" Every prospect asks it. What do we tell him? "Model XYZ will provide comfortable conditions in rooms up to 2,000 cu. ft." The prospect wants bread and we give him a stone; instead of using this opportunity to educate him about air conditioning we hand him a sentence with a "fish-hook" in it. If we are not to mislead the inexperienced buyer, the foregoing sentence should read: "Model XYZ will provide comfortable conditions in rooms of from 300 to 2,000 cu. ft., provided the direct rays of the sun are excluded by means of awnings, Kool-shade or, at the very least, indoor Venetian blinds."

Yes, with the same occupancy,

there is an actual variation of over 600% in the size of the room that can be conditioned properly by a given unit; this size depending on its orientation, location, construction, and time of use. Why not say so, unequivocally, instead of being coy about it?

AFRAID TO TELL LIMITATIONS

In short, too many of us have feared we'd lose the sale, if we told the prospect the limitations of our units. Conversely, haven't we also felt that if we offered the prospect a really adequate unit, properly installed, the cost would be so high he would refuse to buy?

What are the remedies to this dilemma? Your recent editorial certainly puts its finger on one of them: Sell the health angle; sell all the benefits of air conditioning; don't just sell comfort. But there are some others I'd like to propose, particularly now, while plans for 1948 are getting under-way. Here they are:

a. Executives responsible for marketing room air conditioners must now do much more than they ever have before toward presenting their sales information and arguments so the most inexperienced prospect will understand the importance of capacity. The prospect should understand what capacity he needs, and why, and what he is going to get.

And competitors can and should agree on his needs; heat gain is a question of fact, not of opinion. To accomplish this step toward greater customer satisfaction calls for both individual and cooperative effort. It calls for the participation of not just sales personnel, but of engineering and top administrative executives as well.

b. A much better job of training salesmen remains to be done. The highly seasonal nature of the room air conditioner business makes it hard to get good salesmen in the time to train them properly. But properly trained, properly directed salesmen will, at this stage, do more than any other single factor toward creating for this industry the large body of enthusiastic, satisfied customers.

(Concluded on next page)

WOLVERINE TRUFIN

*Why is this called
TRUFIN?*

THE word "Trufin", which is the trade-mark of our Integral Finned Tube, is a contraction of "exTRUded" and "FIN". These words seem best to describe this unique tube because the fins are extruded right out of the tube wall and are thus a part of the tube itself.

With this construction the tube is capable of withstanding vibration and sudden heat changes.

Trufin possesses many times the surface area of plain tube. It will bend as readily as plain tube, and is available in a variety of diameters, alloys, fin heights and spacings.

If your product involves heat transfer, you should certainly acquaint yourself with Trufin to make sure you are not overlooking something that will bring you still greater efficiency.

Let us send you Form S-651 telling about the efficient use of Wolverine Trufin Tube.

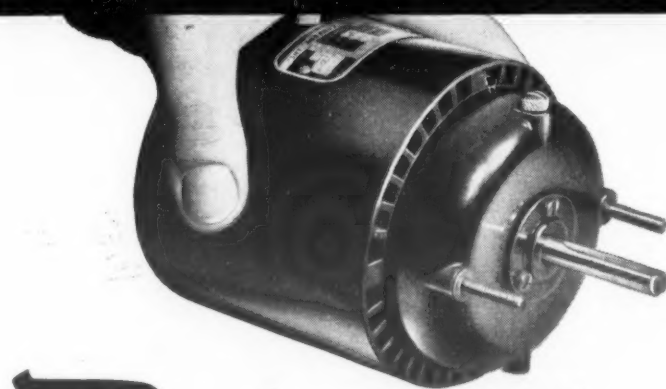
WOLVERINE TUBE DIVISION

CALUMET & HECLA CONSOLIDATED COPPER COMPANY

MANUFACTURERS OF SEAMLESS COPPER & BRASS TUBING

1411 CENTRAL AVENUE • DETROIT 9, MICHIGAN

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SPECIALISTS

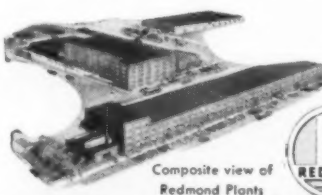


**Redmond
MICROMOTORS**

IN SIZES UP TO 1/15th HORSEPOWER

WHEN you need small electric motors, or help in adapting them to your product, get in touch with Redmond. You can work closely with the Redmond organization with your mind at ease. Redmond Company, Inc. specializes exclusively in the manufacture of Micromotors, speed controllers and small blower units—no complete consumer products to compete with the products of customers.

4-pole shaded pole A.C. Micromotors are available in sizes up to 1/15th hp.; D.C. Micromotors in sizes up to 1/20th hp.



Redmond COMPANY, Inc.

Main Offices
OWOSSO, MICHIGAN, U. S. A.

Merchandising of Room Air Conditioners

(Concluded from preceding page)
tomers which is essential to its continued growth.

Considerably more research and engineering effort must, henceforth, be devoted to the further development of room air conditioners by those who believe in this industry, and wish to share its forthcoming greatness. You probably won't believe it, but the following proposition is a safe bet:

All manufacturers of room units combined are today spending less time, talent, and dollars on the development of improved room air conditioners than is being spent, concurrently, for the improvement of centrifugal refrigeration machines alone, by the three largest makers of this product.

Yet the room air conditioner is a complete system that is potentially saleable in the millions; the centrifugal refrigeration machine is an alternative component of large central stations systems that is barely saleable in the hundreds. Surely this relationship in engineering expenditures is badly out of balance.

You have published a number of excellent editorials on the room air conditioner business. Please keep this up. Additionally, however, we need more news items on the same subject—especially articles that are based on actual field studies.

Time spent by you on the room air conditioner business will not be time spent in flogging a dead horse. Instead, it will help to awaken the Sleeping Giant to which you so aptly refer in your editorial of July 28.

HERBERT L. LAUBE,
President

Here Are the Benefits Offered by a Room Unit

(Following is the list of benefits of a good room air conditioner to which Mr. Laube refers.)

WHY AIR CONDITIONING?

- 1. More Healthful Living and Working Conditions:** Pure filtered air, from which soot, dust, pollen, and germs have been removed, reduces the probability of infection.
- 2. Assures Day and Night Comfort:** Air conditioning banishes discomfort or annoyance due to temperature and other atmospheric effects indoors and thus assures comfort.
- 3. Reduces Distraction from Outside Noises:** With air conditioning doors and windows may be kept closed, thus effectively excluding noises from the street.
- 4. Relief from Hay Fever, Pollen Asthma and Catarrh:** The filtering out of irritating pollens from the ventilating air often relieves those who suffer from these maladies.
- 5. Protects Furniture, Rugs, and Clothing:** Proper indoor humidity keeps furniture from cracking, drawers from sticking, rugs and tapestries from mildewing and protects clothing against the mildewing, wilting, and wrinkling caused by perspiration.
- 6. Reduces Cleaning Expense:** With doors and windows closed, and the ventilating air properly washed and filtered, air conditioning excludes dust and dirt, thereby reducing cleaning costs.
- 7. Increases Harmony by Reducing Irritability:** People who feel good are unlikely to give or take offense; those who are uncomfortable are more apt to be irritable.
- 8. A Better Complexion and NO Body Odors:** Filtered air prevents dirt from entering the pores; dried air eliminates perspiration and the resulting body odors.
- 9. Protection Against Colds:** Tests conducted by medical authorities indicate that air conditioning increases resistance against the common cold.
- 10. Provides Vacation Weather Throughout the Year:** Ideal indoor weather saves time and money formerly spent in seeking relief, elsewhere, from the summer's heat.
- 11. Eliminates Mosquitos and other Insects:** With doors and windows closed, mosquitos and other insects are prevented from entering the conditioned room or office.
- 12. Reduces Probability of Contracting Annoying Skin Rashes:**

Residents of the tropics report that air conditioning actually reduces the tendency to contract irritating skin rashes resulting from excessive heat.

EXTRA BENEFITS PROVIDED BY AIR CONDITIONING IN THE HOME

- 1. Aids Sound, Restful, Restorative Sleep:** Clean, cool air ends sticky sheets and helps provide the relaxed sleep so necessary to withstand the rigors of the day.
- 2. Lessens the Servant Problem:** In a comfortable house, where air conditioning has reduced the need for cleaning, servants are more efficient and content. This results in less "turnover" of help; less bother in training them.

3. Reduces Doctor Bills: From what medical men say about the way in which true air conditioning benefits many who suffer from respiratory illnesses, it stands to reason that it should help to reduce doctor bills.

4. Lengthens the Life of Family Heirlooms: Most families have cherished possessions that have been handed down from one generation to another. Air conditioning assists in preserving these by protecting them against climatic changes.

5. Enhances Personal Popularity: Social and business friends will always welcome an invitation to visit a home where they, too, can enjoy the benefits of true air conditioning.

IN THE OFFICE

1. Increases Personal Efficiency: An air conditioner provides a constant supply of properly conditioned air at all times, thus preventing vitiated room air that has a tendency to dull the most brilliant mind.

2. It Pleases Clients and Enhances Prestige: Air conditioning enhances the prestige of the business or professional man. He finds it easier to hold old clients and to attract new ones. They prefer to visit his office instead of his competitor's.

3. Offsets Unfavorable Location: Clients will go out of their way to enjoy a comfortable office. Thus an office on a side street is less apt to

be penalized because of its location; yet it has the advantage of lower rents.

4. Makes a Man More Effective: Clients shun hot stuffy offices during the hottest part of the day, but like to visit offices that are cool, clean, and comfortable. A man with such an office can, therefore, make more effective use of his time.

5. Air Conditioning Increases Profits: More business, higher efficiency, pleased customers and clients, enhanced prestige—these things all help to produce increased business and more profits.

And let us not forget landlords, hotel operators, and the like. They obtain higher rentals for space that is air conditioned.



2 Tons Freon

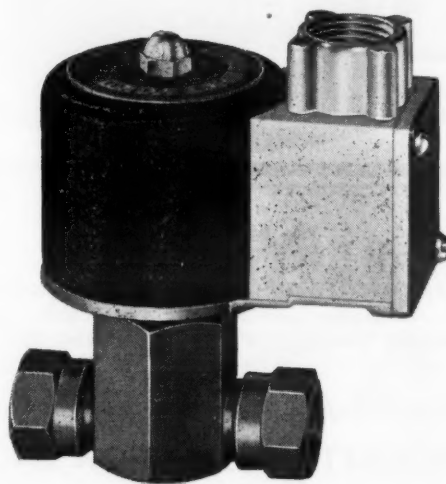
Brass body, renewable soft Neoprene seat. Come-apart construction with rotatable coil and aluminum junction box. $\frac{3}{8}$ " F.P.T. connection.

SV 21

SV 11

1 Ton Freon

Brass body, mounted in standard electrical outlet box. Easily installed. $\frac{3}{8}$ " F.P.T. connections.



INTERNAL PARTS
OF HENRY SOLENOID
VALVES ARE MADE OF
STAINLESS STEEL.

Henry Solenoid Valves
choice of
refrigeration engineers who
want quiet, efficient valves
... of advanced design!



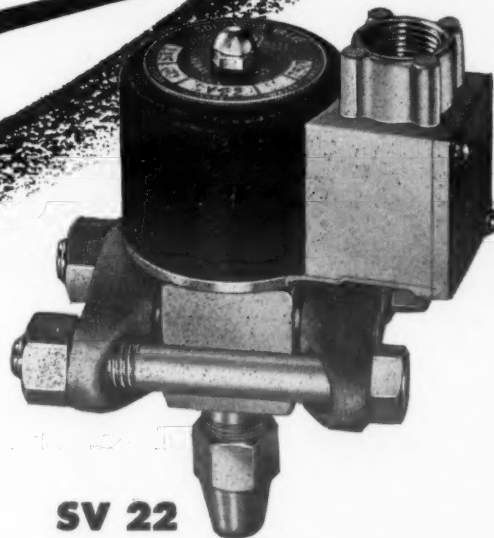
3 Tons and 5 Tons Freon

Brass body, come-apart construction with rotatable coil housing. Two piece impact plunger with direct acting metal-to-metal seat on SV 31. Neoprene seat on SV 51. Manual operating stem. $\frac{3}{8}$ " and $\frac{1}{2}$ " F.P.T. or solder connections.



SV 101 and SV 201

10 Tons and 20 Tons Freon
Brass body with flanged come-apart construction. Pilot-piston operated. Connections $\frac{3}{4}$ " F.P.T. or $\frac{7}{8}$ " O.D. solder.



SV 22

10 Tons Ammonia

Steel body with come-apart construction and hardened steel renewable seat. Aluminum junction box. Manual operating stem. $\frac{3}{8}$ " and $\frac{1}{2}$ " F.P.T. flanged connections.

SOLD BY LEADING JOBBERS

HENRY VALVE COMPANY

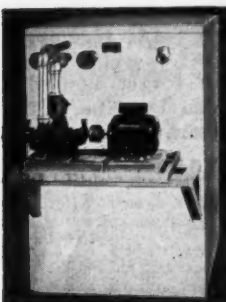
Control Devices, Valves, Driers, Strainers and Accessories for Refrigeration and Air Conditioning and Industrial Applications

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INDUSTRIAL TYPE
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Manufacturers of Water Coolers & Filters for over 40 Years

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Strong Selling Job Nets Repeat Sales Plus Good Deliveries for Commercial Distributor

Giving 'A Little More Than Expected' Cited As Key to Success

By C. Dale Mericle

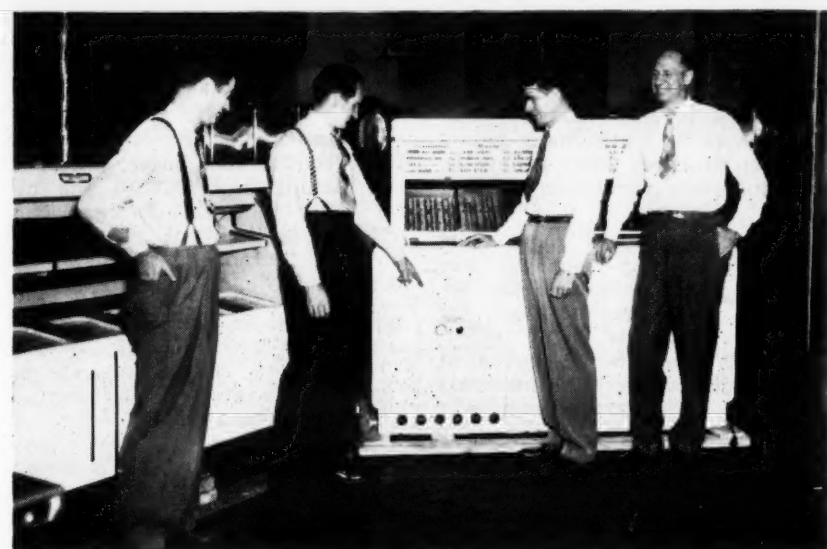
PITTSBURGH—Operated by four partners, the Pittsburgh Case Sales Co. is covering a wide territory with intensive selling and promotion of commercial cases and air conditioning through some 300 dealers.

Fogel, Jordan, and Worthington are the major lines handled by this distributor, but the firm also places considerable emphasis on the Reynolds Eskimo Freezer and the Stanley Knight soda fountain line.

Walter R. Brown is general manager, with the other three partners actively holding executive posts. Walter G. Schneider is sales manager; John E. Weber serves as industrial sales engineer specializing on air conditioning, industrial processing, and water cooling, while Robert E. Shaw is nominally in charge of all appliance sales.

The latter operation will probably become increasingly important, as the company plans eventually to install a very complete appliance division.

Now occupying a five-story building near the "point" of Pittsburgh's famous "Golden Triangle," the com-



Here are the main commercial lines (Fogel and Jordan) and the four partners who operate Pittsburgh Case Sales Co., commercial distributorship: (l. to r.) Walter G. Schneider, sales manager; Robert E. Shaw, appliance sales manager; John E. Weber, industrial sales engineer, and Walter R. Brown, general manager.

pany plans to move into a new building within a few months. The present structure has been condemned by the city of Pittsburgh to make way for a civic park development along the Allegheny river, according to Mr. Brown.

Territory covered on most of its lines includes all of western Pennsylvania lying west of Harrisburg, all of West Virginia, the western tip of Maryland, and a few counties in eastern Ohio.

Pittsburgh Case Sales operates almost exclusively on a wholesale basis. On air conditioning, however, the company finds it has to do considerable direct selling. Occasionally a big commercial case installation may be too large for a small dealer to handle, so the distributor steps in and helps with the sale, laying out the job, and making the installation. Five outside salesmen are employed.

Service work on installations is performed by the dealers themselves. "All of our dealers are commercial service and sales dealers," explains Mr. Brown. "Most of our commercial dealers started in the refrigeration business as servicemen. The service work we occasionally have to do as a distributor is contracted out to service firms."

Deliveries—a nightmare for most dealers and distributors today—poses no problem for Pittsburgh Case Sales.

"We have very wonderful deliveries; we're getting nearly all we want," declares Mr. Brown. "We enjoy a very close relationship with our suppliers and have a fine reputation and standing with them," he said

in explaining this somewhat unusual condition.

Part of the explanation lies also in the strong selling job the company has always done.

"Our secret is to 'try to give a little more than expected,'" he adds, pointing out also that "we are right now getting calls from people we sold eight or 10 years ago who want to buy again."

The firm was organized by Mr. Brown back in 1936, and he recounts that during 1935, when he was sales manager for the Pittsburgh Store Fixture Co., that firm put out 350 meat cases in one year.

These "repeat calls" are encouraging to any sales organization, and the Pittsburgh Case Sales Co. also finds encouragement in the improved standards of workmanship that have characterized shipments from factories in the past eight months, as well as better workmanship among its men.

Workmanship Has Improved

"Equipment is better made and arrives in better shape than it did eight months ago," asserts Mr. Brown. "When you deliver a box with dents, it makes a bad impression. Workmen all along the line had been coasting, but now these conditions are much improved."

Big market for the immediate future in commercial equipment is going to be the new supermarkets, he believes.

"Our cases are outmoded, and there is a lot to be done to improve (Concluded on next page)

We Manufacture XL
'Freon' Compressors and Condensing Units (1 to 10 h.p.)
Ammonia Compressors 4x4 — 5x5 — 6x6
Ammonia Valves 1/4" to 3" Screwed and Flanged

ALSO

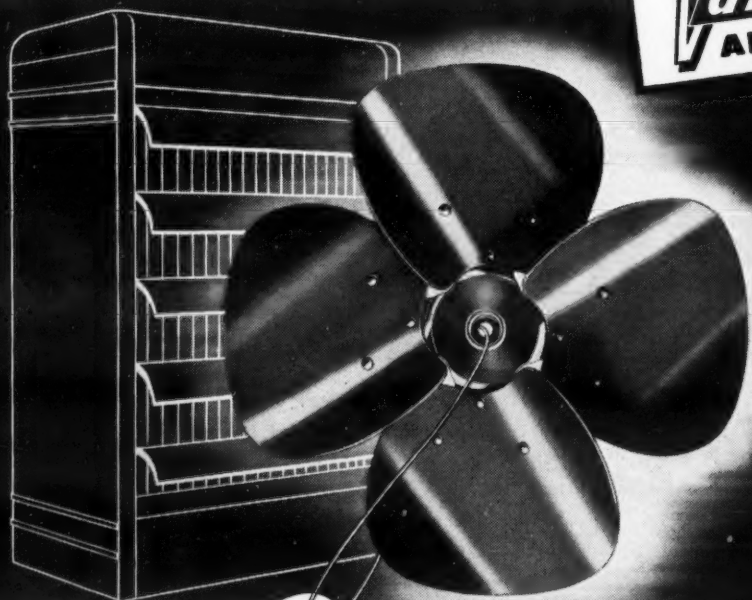
Ammonia Flanges—Strainers—Discharge Check Valves

AIRCRAFT PRODUCTION ENGINEERS

DIVISION OF
THE XL REFRIGERATING CO.

1834-42 WEST 59th STREET

CHICAGO 36, ILL.



Verified
AIR IMPELLERS

Verified... aerodynamically designed for maximum operating efficiency with quietness; guaranteed to perform as rated under NAFM and NEMA Test Code conditions; hand gauged for uniform contour, alignment and balance. The Torrington Manufacturing Company.

**QUIETER OPERATION
GREATER AIR DELIVERY
SLOWER MOTOR SPEED**

All Through Torrington **Verified** Air Impellers

Three major product improvements were obtained by a manufacturer of unit heaters using Torrington Air Impellers and the engineering experience behind them.

Here Are the Quick Facts

Original Performance Data of Unit

Motor Speed.....1570 rpm
Air Delivery.....750 cfm at .1" sp
Noise Level.....Objectionable

Improved Performance Data of Unit

Motor Speed.....1540 rpm
Air Delivery.....900 cfm at .14" sp
Noise Level.....Acceptable

Plan to add the advantages of Torrington Air Impellers to those new or improved products you're thinking about. And remember, you can probably save time and money by letting us consult with you while your product plans are in the initial stages of design.



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MANUFACTURING COMPANY, TORRINGTON, CONNECTICUT

AIRISTOCRAT FAN BLADES • AIROTOR BLOWER WHEELS • IMPROVE PRODUCT PERFORMANCE

STANGARD

Prime Surface

COLD PLATES

For Maximum Refrigerating Efficiency



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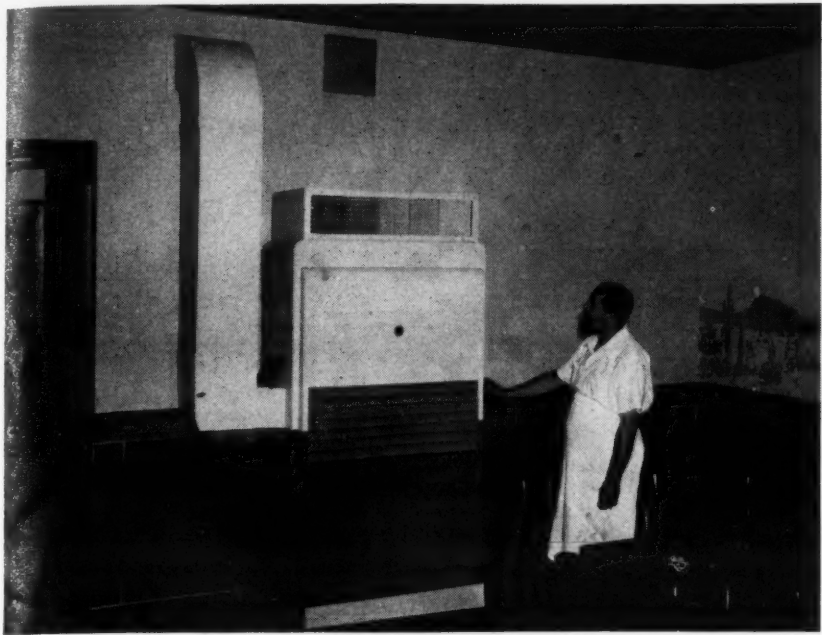
CORPORATION

46-76 Oliver Street • Newark 5, N. J.

STANGARD KNOWS REFRIGERATION

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Case Distributor Also Promotes Conditioning



Joseph Meyers, one of four brothers who operate a tavern in Pittsburgh's south side, adjusts the control of one of the two air conditioners which Pittsburgh Case Sales Co. installed as part of a remodeling job which included new front and back bars, beer coolers, and furniture.

Open Case Sales--

(Concluded from preceding page)
them, especially the open type self-service cases."

The open case is "wonderful as a merchandising medium," but Mr. Brown contends that "almost every open case is deficient in respect to moisture."

"The difference in vapor pressure between the air in the case and the surrounding air forces moisture into the case. I don't know how we can correct this condition. Perhaps fans are needed in the case to set up a back pressure. At least, I think we need some sort of forced air cooling which will allow some of the cold air to spill out of the case."

This is Mr. Brown's viewpoint on the technical aspects of the open case. But he agrees fully with others in the industry who cite the open case as an excellent builder of sales.

"I know of an A&P store that was selling \$16 worth of milk daily from a self-serve sliding door reach-in. When an open type case was installed, sales jumped to \$75 a day."

Druggist Increases Sales

This principle of display to create more sales is shown in a similar instance cited by Mr. Brown. A Jordan frozen food display case was installed for a druggist who used it for ice cream specialties, Dixie cups, popsicles, and the like.

Although this is not an open case, the clear-view sliding tops do bring the products out where the customers can see them, he points out. On the first Saturday this druggist increased his ice cream sales by \$90, reported Mr. Brown.

"When we see these things on display, our mouths water and we want to buy," he says.

The frozen food business, home freezers, and display cabinets offer considerable promise for the future," believe the four partners in this firm.

"People in this locality are becoming more and more interested in frozen foods," commented Sales Manager Schneider.

"Frozen food companies themselves are very well represented in Pittsburgh. This indicates the great interest in frozen foods here," said Mr. Weber.

"The merchandise is handled properly, and it's in good condition when it gets to the store. We seem to have very good delivery service in Pittsburgh for frozen foods," he added.

"Home freezer sales have dropped off a little, but they should pick up

with the canning season," suggested Mr. Schneider.

"There's tremendous market in frozen foods and freezers, but it's been hardly scratched," pointed out Mr. Brown, who believes there are probably three classes of city dwellers who are interested in frozen foods.

"The first group generally needs only the amount of frozen food storage space supplied by his modern refrigerator. The second class includes the sportsman who hunts or fishes. He should buy a 3 to 6-cu. ft. freezer. The third user, however, may go up to the 16-cu. ft. size.

Status of Freezer Market

"Quite a number of these bigger freezers have gone into institutions and farms around here. Allegheny county, strangely enough, is highly agricultural as well as being highly urban and industrialized, too.

"There are numerous small farms whose owners can freeze moderate amounts of food they raise themselves. This also means that many city dwellers have relatives on nearby farms who can supply them with fair-sized amounts of food for freezing, such as sides of beef."

The public, however, needs considerable education or "re-education" on the subject of freezing foods in the home, says Mr. Brown.

"I really think that the average householder believes he can't freeze as fast as he should in the home freezer. But he's wrong. We have found that the very slowly frozen product is quite satisfactory. The idea that foods should be frozen very, very quickly is something that scientists just grabbed out of the air," he declares.

One of the shortcomings of freezer promotion up to now, at least, is that the public hasn't been told how it can save money by using a home freezer, say the partners of this distributorship.

"This idea should be promoted just the way it was with the household refrigerator years ago," they emphasize.

Another drawback to freezer sales, which is echoed all over the country, is the poor quality jobs that were put on the market by small, local firms.

"Believe it or not, we have a dozen hole-in-the-wall places around here building freezers," commented Mr. Weber. "These freezers are not very satisfactory. Half of those people who bought these now wish they hadn't; the other half will soon be sorry."

In addition to freezer and case sales, air conditioning and water cooling installations are receiving considerable emphasis from the firm. Some 200 water coolers are installed

in industrial plants last year, and Pittsburgh Case Sales Co. find this a very satisfactory operation.

On air conditioning, both package and central systems are installed. The Worthington franchise, which goes up to 100 tons, includes package conditioners in the smaller tonnages.

The market for package units is excellent, believes Mr. Weber, but he points out that such units may not be the right answer for the larger installations.

"When you reach the point where five or six package units may be required in a large space, such as in a store, it may be much better to install a central system," he says.

"Noise from all these units may be objectionable, and then sales space is important, too. When an air con-

ditioning salesman goes into a place and wants to take up a lot of room for the air conditioning equipment, he must remember that he'll be taking away some of the prospect's building and valuable floor space."

Most of the air conditioning systems put in thus far have been installed by the distributor, although the firm is encouraging its dealers to promote this line actively.

Pittsburgh Case attempts to train its dealers carefully, but as yet hasn't instituted any formal training program. When the company moves into its new building, however, it expects to schedule regular training programs for its dealers.

"Whenever we have sold specialized equipment, though, we have instructed our dealers thoroughly on

its operation," explains Mr. Brown. "And we think that every firm should have at least one man who knows when a piece of equipment is perfectly installed."

He recalled a recent complaint on a case that was not giving satisfactory performance. Inspection by the distributor revealed that one of the baffles around the coil in the top of the case had been jammed into the side of the drip plate beneath the coil. This prevented air circulation all along the front of the case and fogged up the glass.

"It took only a moment for us to shift the baffle to its proper location, and any man who knew the equipment well enough would be able to observe the cause of the trouble immediately and correct it."

Every One A PROSPECTIVE CUSTOMER for the SELB S4



**GET ADDED SALES
from the direct mail lists
we compile for you!**

Prospects in your own community! Our direct mail department is at all dealers' disposal. We mail advertising literature direct... and send prospective customers' names in your community... to you.

ANOTHER SELB SERVICE TO SELB DEALERS!

SELB MANUFACTURING CO.



ARCADE BLDG., ST. LOUIS 1, MO.

SALES ENGINEER WANTED

We require a man with the following qualifications:

Thorough knowledge commercial refrigeration and coils in particular.

Intimate contact with jobbers and manufacturers—East.

30-45 years old.

If your past record will stand a rigid investigation, an unusually attractive position awaits you. Remuneration in excess of \$9,000 yearly.

Box 2497, Air Conditioning & Refrigeration News

Standard Range Shipments Up

WASHINGTON, D. C.—A total of 87,967 standard type electric ranges valued at \$10,500,000 and 11,866 apartment house type ranges valued at \$726,000 were shipped during June, the U. S. Bureau of Census has reported.

This compared, the bureau said, with 78,176 standard type ranges valued at \$9,000,000 and 12,133 apartment house type ranges valued at \$746,000 shipped in May.

North Central Shifts Office

MINNEAPOLIS — North Central Electrical Industries has moved from suite 234 to suite 209 in the Foshay Tower here, the organization has announced. Its telephone number is Geneva 8538.

Dept. Store Demonstrates Models In Appliance Center

BUFFALO—The William Hengerer Co., department store here, has opened a new appliance center on its main floor. Roy Geyer is manager and buyer for the department and Charles Nyquist is acting as sales manager.

The department will have an outside sales force of 12 men who are being trained by manufacturers and distributors. The new department emphasizes appliances at work in order to give customers first-hand knowledge of the job which various units perform. Two model laundries and a model kitchen are maintained and demonstrators are used extensively throughout the store's new appliance center.

Fair Booth Nets Dealer 300,000 Prospects on New Mailing List

PITTSBURGH—To organize a new mailing list for refrigerator and appliance sales, the furniture department of Donaldson Transfer & Storage Co., 1018 Western Ave., took a place at the Allegheny County Fair, held a free drawing for prizes every night.

In four days, 300,000 names, addresses, and telephone numbers were collected from people all over this area.

"I don't know anyone at the Fair who did any more!" reported L. L. Curry, department manager. "Eight people did little else but distribute and collect tickets and pencils during those four days," Mr. Curry explained.

New Promotion Begins In Dealer Showrooms

As this special glass-front dishwasher runs through each of its functions, a corresponding panel lights up on the shadow-box demonstrator. Hotpoint has arranged a series of showings for the demonstrator at various dealers throughout the country.

Hotpoint Flashing Demonstrator Throws Light on Separate Dishwasher Functions

CHICAGO — A shadow-box type demonstrator that automatically flashes lights on panels surrounding a dishwasher, will be operated for customers in two-week showings in dealers' stores by Hotpoint, Inc.

First showings include Gimbel Brothers Department store, New York City, in September, and Commonwealth Edison Co., Chicago, which was covered in August. Other showings will include key department stores across the country, and at such special events as the Westchester County Better Homes Exposition, White Plains, N. Y., and the Minnesota State Fair.

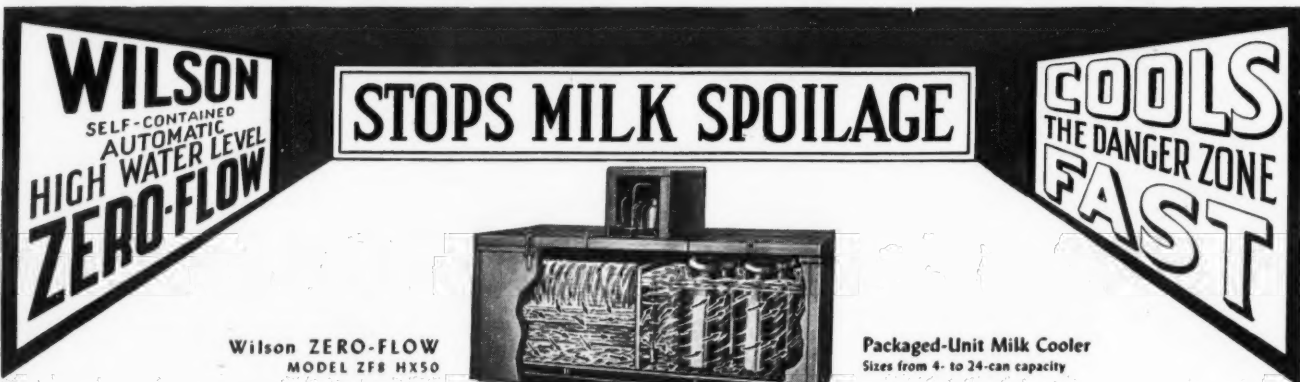
The front-opening dishwasher is designed into a blue background on which the words, "spray," "rinse," "drain," "wash," and "dry" are electrically flashed while the machine goes through its eight-cycle operation of washing 58 dishes at the touch of a button. A special glass panel has been inserted in the open door so that each cycle in the automatic operation may be watched.

While the company has demonstrated this dishwasher operation

with a built-in glass paneled door frequently, the engineering innovation that electrically describes every process was introduced just recently at the International Home Furnishings market.

Discussing the future market for the automatic dishwasher, Mr. Truesdell pointed to the fact that the company's 1946 sales were 12 times that of 1941, while the 1941 sales were three times that of the previous year. At no time since the war has the company been able to meet the demand for dishwashers, and the 100,000 to be manufactured in 1948 will barely supply this cumulative market, he said.

Continuing his discussion, Mr. Truesdell said that while smaller dishwashers and even portable machines are being introduced, Hotpoint's market studies indicate that the demand for the automatic dishwasher that washes, rinses, and dries "all the dishes at one time" is continually increasing. No major changes have been made in the basic design of the 1947 dishwasher, Mr. Truesdell noted.



TO CAPTURE AND HOLD

THE FARM MARKET

Specify Genuine "Refrigeration by Wilson"

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Keeps 'em coming ALL YEAR 'ROUND



HOTPOINT'S COMPLETE MATCHED LINE OF 11 MAJOR APPLIANCES MEANS YOU CAN SELL MORE—MAKE MORE—THE YEAR 'ROUND

BLOW HOT OR COLD—there's a "seasonal" market every month of the year for one or more of Hotpoint's 11 major appliances. A rising mercury, for example, means a rising market for refrigerators and freezers. But raw, blizzardy weather makes garbage an extra nuisance, steps up demand for the Hotpoint Disposall*. Pleasantly cool weather, on the other hand, means larger meals, more dishes. That means business for the famous Hotpoint Dishwasher.

• The more it rains, the more orders will pour in for Hotpoint Clothes Washers, Dryers and Ironers... every one especially designed, among many other advantages, to simplify the clothes-drying problem.

• Then there are those greatest of all year 'round performers—the Hotpoint Electric Range and the Hotpoint Water Heater. Completely unrelated in function, they are alike in month-in, month-out demand.

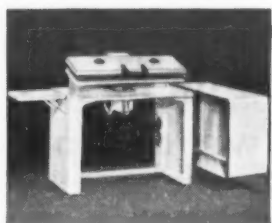
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*Reg. U. S. Pat. Off.



Revolutionary Hotpoint Hot Water Heater has pressurized direct contact Calrod® units for unmatched speed.

Space-saving Hotpoint Refrigerator gives ½ more food storage in the same kitchen space, plus many other new features.



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Hotpoint's 3-Point Program gives you (1) the benefits of a \$20,000,000 expansion program, (2) a completely matched group of all major appliances, and (3) the greatest advertising campaign in Hotpoint history—assuring you a steady flow of America's finest appliances, adequately promoted in leading national magazines to bring year 'round volume and profit.

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NOTE—A limited quantity of current (1946) edition still available for immediate delivery.

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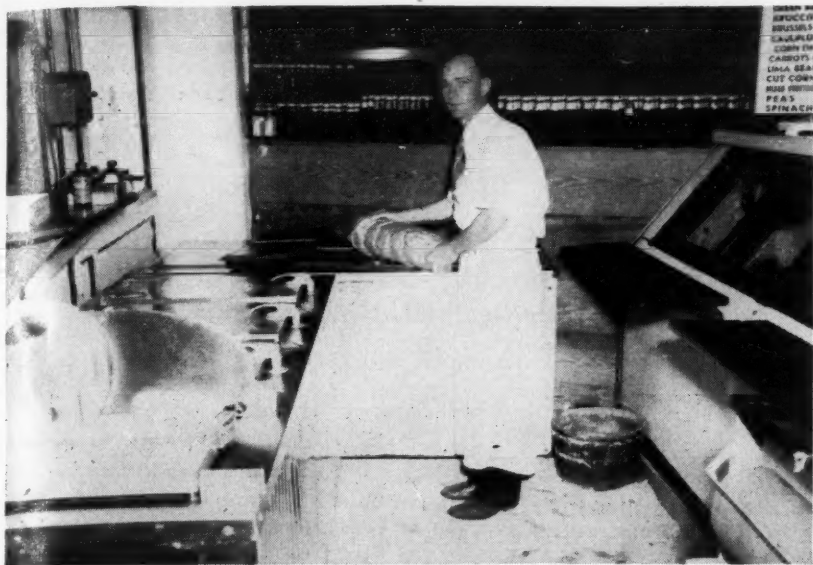
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Ice Cream, Commercial Cabinets Fill Need



Behind the counter at Drew's Food Store where the two freezing units are kept full of front-quarter cuts of meat.

2 Low-Temp Cases Solve Butcher's Meat Supply Problem, Boost Sales, Cut Costs

AUGUSTA, Ga.—The use of two low temperature cabinets behind the standard meat counter has enabled Walter Drew, head of Drew's Food Store here, to solve one of the retail butcher's worst problems—making his volume of front-quarter meat cuts match that of hind-quarters.

Roasts cut from front quarters, including shoulder roasts, chuck roasts, never move as rapidly as hind-quarter cuts, and consequently, the average butcher must order far more hind quarters than front quarters.

However, if he can order whole carcasses, the over-all price of the meat is reduced by as much as 5 cents per pound, according to Mr. Drew.

The installation of two freezer cabinets in back of the meat counter, one a 6-compartment ice cream cabinet, and the other a 4-compartment commercial freezer, has completely done away with this problem for Drew's Food Store in combination with a bit of "fancy butchering" which produces front-quarter

roasts cut from 3 to 6 pounds.

Utilizing the spare hours early in the week, Mr. Drew and his two butchers neatly remove the bone from all front quarter meat, remove the sinews, and all excess fat, rolling up the resultant tasty meat into large roasts which may run anywhere from 2 to 8 pounds.

These are neatly wrapped in refrigerator paper, and tied up, all front-quarter cutting being accomplished by Wednesday of each week. They are then kept in the freezer, which will hold upwards of 600 pounds, until the "weekend rush" begins. Then, Drew and his butchers suggest flavorful chuck roast, shoulder roast, etc., and exhibit the large roasts which have been "tenderized" by being sharp-frozen all through the week.

Invariably, every roast is sold by Saturday evening, making it possible for Drew's Food Store to order exclusively in whole carcasses, and sometimes even making it necessary to send out for more front quarters.

The two freezers quickly paid for

themselves, according to the Augusta store owner, inasmuch as they have made possible the sale of better than 100 pounds extra of front quarter cuts per week—or anywhere from \$60 to \$75 additional revenue per week. Sharp freezing gives the meat a tender, juicy quality, which has brought many customers back again and again.

York Corp. Replacement Unit Saves Dept. Store 75% Space

PITTSBURGH—York Corp. has just replaced the ammonia refrigeration at Kaufmann's nationally-known department store here with a turbo water-cooling system, reports J. Kronholtz, branch manager.

Former installation had five York 100 hp. 10 x 10 two-cylinder motor-driven compressors.

Now, one single unit takes up less space than even the compressors did formerly.

New units occupy only 16 x 12 ft. in the sub-basement. The 75% floor space saved will be occupied by a pipe and machine shop.

Burnett Joins Deepfreeze

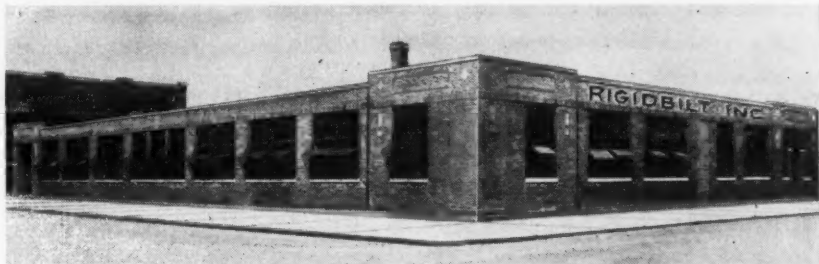
ATLANTA—George Burnett has joined the Deepfreeze Division, Motor Products Corp., as Atlanta district sales manager.

He had been most recently connected with the Chattanooga Power Board as dealer co-ordinator in that area.

F. S. Griswold Leaves Maisel's

BUFFALO—F. Scott Griswold has resigned as general manager of Maisel's, Inc., appliance firm here.

Plant Triples Manufacturing Space



Rigidbilt's new plant on the west side of Chicago.

Rigidbilt Inc. Purchases New Factory In Chicago

CHICAGO—Purchase of a new plant for the manufacture of "Rigidbilt" finned evaporators and lowside equipment has been announced by W. W. Bradfield, president of Rigidbilt Inc.

The Rigidbilt firm, formerly known as Manufacturer's Fin Coil Co., has its present location at 2505 S. Pulaski Road, Chicago.

The new plant is located at Fulton and Francisco Streets in one of Chicago's west-side manufacturing districts. It has triple the floor space of the present plant, and increased production is anticipated on such products as air conditioning and steam heating coils, counter coils, gravity coils, unit coolers, etc.

Company officials estimate that from two to three months will be required until the new plant will be ready for manufacturing operations. In the meanwhile, a full production schedule is to be maintained at the Pulaski Road address.

Herrick, Schuld Head Cleveland Refrigeration Contractors Association

CLEVELAND—O. B. Herrick of Lighthouse, Inc. was elected president of the Refrigeration Contractors Association of Cleveland at the annual meeting held recently.

Other officers elected are George Schuld, Schuld Refrigeration, Inc., vice president; Harry Hattenbach, Hattenbach & Sons Co., secretary; Joe Kuday, Kuday Electric Co., treasurer; Ed Vadakin, Vadakin Refrigeration Co., sergeant-at-arms. Directors at large elected Sam Aub, Puro Water Filter Co.; Ernie Farr, Bell Refrigeration Corp.; E. F. Flanik, Allied Refrigeration Engineering Co.; and Walter Wright, Sterling Refrigeration Co. Wallace Heiser is executive secretary.

The association has 25 members and is affiliated with the National Association of Refrigeration Contractors.



The Grand Canyon of the Colorado River, in northern Arizona, is the greatest canyon on earth—200 miles long, eight to ten miles wide, more than a mile deep in many places. The bared rocks, in their riot of reds, buff, greens, and white, represent geologic time from the oldest known to the present day. Discovered by Cardenas in 1541, it has been a National Park since 1919, a tourist magnet of great importance—and rightly called "the most sublime spectacle in the world."

A favorite adjective employed by users to describe their Mills Condensing Units.

Mills Condensing Units

Products of Mills Industries, Incorporated
4100 Fullerton Avenue, Chicago 39, Illinois



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Solid, sturdy construction makes this rugged FOGEL "Armor-Clad" Walk-In Cooler the best in its class. This famous FOGEL-Improved cooler has many noteworthy advantages, such as:

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- ★ The combined knowledge and efforts of master craftsmen and top-flight engineers, have gone into the exclusive design, construction, and operation of this cooler to give YOU a sure sale profit maker.

You can depend on the FOGEL-Improved "Armor-Clad" Walk-In Cooler for lasting customer satisfaction. Feel welcome to write for further information concerning these, or other, FOGEL Quality-Engineered refrigeration items.

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They'll Do It Every Time By Jimmy Hatlo



It's Time To SELL Again!

Turning a shaft is an old problem



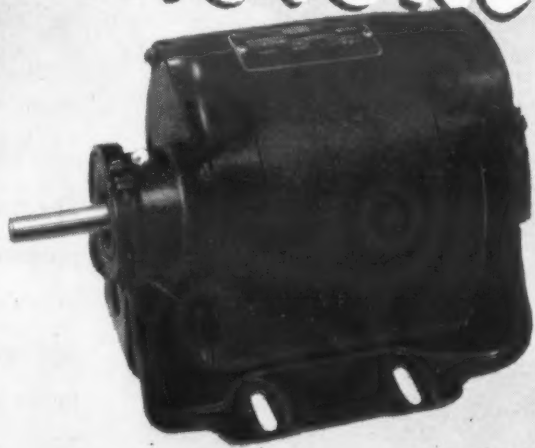
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Delco motors benefit by Delco Products' close association with the appliance industry. They incorporate improvements and refinements developed in serving leading manufacturers of refrigerators, washers, ironers, stokers, oil burners, air conditioners and other appliances.

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Double-Barrelled Opportunity For Specialty Dealers: The Home Freezer

(Concluded from Page 1)

months have passed, they'll need trained specialty salesmen again. But when they try to recruit and educate these incipient specialty product pioneers, they soon learn that the atmosphere seems all wrong. Their "rookies" are listless, they don't seem to get "the hang of it," or the point to it.

Why? Because in a sellers' market there's little competition. And the very essence of specialty merchandising is competition. It's a fight, a struggle, a game. When selling deteriorates into allocation, however, there's no incentive present to make a salesman work hard or to maintain his initial enthusiasm.

Nevertheless, the fact remains that a sellers' market can become a buyers' market almost overnight. And when that time arrives, distributors and dealers will be scrambling madly to hire and train adequate crews of specialty salesmen.

Trouble is, before they'll be able to find and teach them, they'll have lost a lot of money and a lot of ground.

There's a simple solution to this dilemma, which worries so many prescient appliance distributors and dealers, however. It's a solution which is so obvious that most of us have overlooked it. Here it is:

The home freezer is still in the pioneering stage. It hasn't become an automatic-demand item yet. It has no replacement market. So it must be sold to people who don't realize they need it.

All right. Hire and train salesmen to pioneer the home freezer. They can get their teeth into this proposition. Then, after they've been weaned on this pioneering job, you'll have them when you need them to push other appliances.

To sell home freezers, you must be sold on them yourself. Next, you must believe in them so implicitly that you can't wait to spread the gospel to others. You must evangelize. (And that, of course, is specialty selling.)

Now that everybody and his brother Herman is screaming about high food costs, the specialty salesman who evangelizes home freezers is promoting a cause which he can champion with great good faith. He is honestly helping his prospects and customers to live better, and to save money, when he sells another home freezer. Thus he "catches the fever," or "gets religion," or whatever you want to call it, when he gears into a specialty selling brigade which is concentrating on the promotion and sale of home freezers.

He becomes a satisfied employe, then, and proud of his profession. He can go on from there to make a career out of the selling of home appliances.

Mr. Dealer: Here is the answer to your biggest problem. *Hire and train salesmen to push home freezers.*

You'll kill two birds with one stone: (1) You'll train a hard core (or corps) for the specialty selling organization you'll need later on; and (2) you'll build a brand new business from which you can profit for years to come.

The home freezer is the most exciting new product to invade the tired, bored postwar "economy." It holds a magnificent promise for the future, and it can shore up present rickety structures.

Climb aboard the bandwagon! Join the Success Parade!



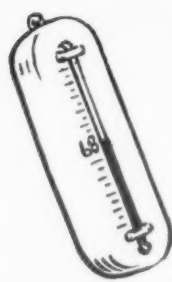
Your Refrigeration Equipment Wholesaler...

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THE triumphs and troubles, the progress and problems of refrigeration are all reflected in the busy routine of your Refrigeration Equipment Wholesaler. The center and hub of refrigeration service in each community, he offers far more than easily accessible stocks of hard-to-get parts and supplies. He offers, as well, knowledge, experience, cooperation in service problems, and a zealous regard for the welfare, business problems and success of his friends and customers. These are the thousands of Refrigeration Service Engineers who maintain the nation's refrigeration systems day in and day out.

You may depend on your local Refrigeration Equipment Wholesaler for an increasing high standard of service and the best and latest in Refrigeration parts and supplies.



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A-P Dependable Model 235-S Suction Pressure Regulating Valve

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Requirements****Curtis Refrigerating Machine Division**of Curtis Manufacturing Company R-528
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Established 1854

HEAT TRANSFER EQUIPMENT**MARLO
COIL COMPANY**
SAINT LOUIS, MISSOURI

The KEY to AIR CONDITIONING

by James J. LaSalvia

Editor's Note: Continuing this series of articles which presents a practical approach to the problem of designing and installing comfort cooling systems. Mr. LaSalvia, a veteran engineer, discusses methods of using dehumidifying equipment in this installment.

Refrigeration (Continued)

DEHUMIDIFYING ONLY

Dehumidifying only may be accomplished by the following methods:

a. By heating the air stream and raising the room temperature, thereby keeping the amount of moisture in the room constant. This will lower the relative humidity in the room.

b. By mechanical means (with compressor). By cooling the air stream low enough in temperature to accomplish the proper moisture removal and then reheating the air to room temperature. This will lower the relative humidity in the room.

c. With well water low enough in temperature to accomplish the desired moisture extraction and then re-heating, same as in (b).

d. With hygroscopic material, in adsorption systems.

ADSORPTION SYSTEMS

An adsorption system is in general a dehumidifier. Such a system is used to remove a certain portion of the moisture directly from the air.

It uses hygroscopic materials which have a great affinity for water. These materials may be liquid, gas, vapor, or solid, of which the most common ones used are silica gel, lithium chloride, aluminum oxide, and calcium chloride.

Lithium chloride is a liquid and when sprayed in the path of the air will absorb moisture from the air. The others are solids and are held in containers or beds placed in the path of the air stream and adsorb moisture from the air.

As with silica gel, when the moisture is removed from the air, the dewpoint temperature of the air is

How Rotary Air Dryer Operates

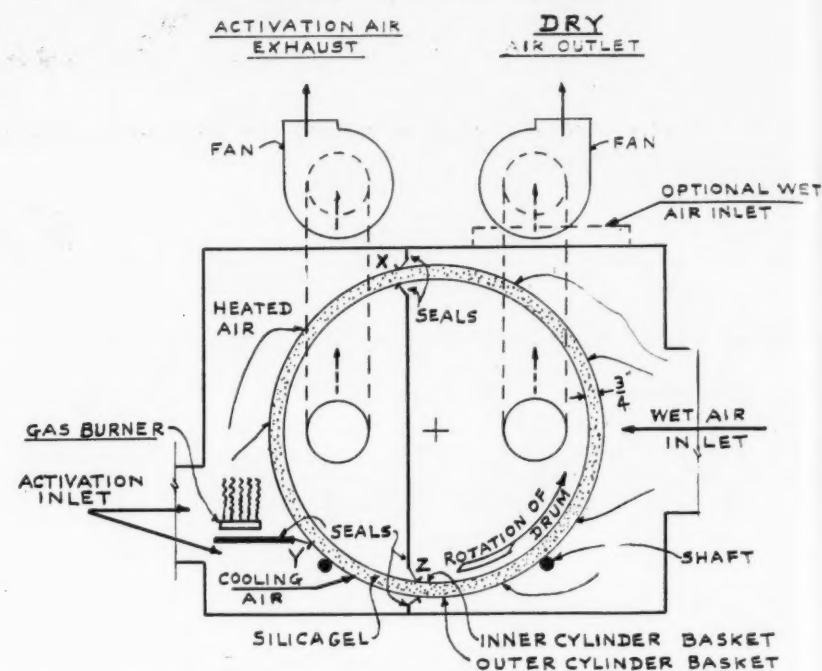


Fig. 1—Used for dehumidifying purposes, the rotary air dryer as made by the Bryant Heater Co. employs silica gel to remove moisture from air. Heat from the gas burner shown above reactivates the silica gel automatically.

reduced. By reducing the dewpoint temperature, the latent heat equivalent of 1,080 B.t.u. per pound of water must be released, and of course the same air is also the absorber of this heat, which is sensible heat. During the evaporation of the water, the latent heat is changed to sensible heat.

This means that the dry bulb temperature of the entering air is raised accordingly. The total sensible heat absorbed by the air due to its losing moisture is equivalent to the latent heat condensed plus the frictional heat of the equipment. This is called heat of absorption.

The process of removing moisture from the absorption bed is called activation. The temperature used to drive off such moisture is about 350° F. through the bed.

After the moisture has been removed from the air, the air can then be used in the following manner:

1. It can be supplied to a space, the air being hot and dry will lower the relative humidity of the space, and the dry bulb temperature of the space will be raised. This would be strictly a case of dehumidification.

2. The hot and dry air can be passed through water or direct expansion cooling coils to cool the air to any desired temperature. This action would accomplish the cooling of the air only. The air can then be supplied to a space where cooling and dehumidification would take place.

For example, suppose that air at 95° d.b., 77° w.b., and 70° d.p. temperature, which has 111 grains of moisture per pound, were to be dehumidified by the adsorption system to a 57.5° F. d.p. temperature where it would hold only 71 grains per pound. What is the latent heat removal and the d.b. temperature of the air?

$$\begin{aligned} \text{Grains removal is } 111 - 71 &= \\ 40 \text{ grains per pound.} \end{aligned}$$

$$\begin{aligned} 40 \times 1080 &= \\ 7000 &= \\ 6.2 \text{ B.t.u. per pound of air.} & \\ \text{The temperature rise:} & \\ .018 \times 13.85 &= 25^\circ \text{ F.} \end{aligned}$$

The d.b. temperature of the leaving air is 95° + 25° or 120° F.

Allowing about 10° for the built-up heat carried over from the activation cycle, and 10° for the frictional heat of the equipment would make the d.b. temperature leaving the dehumidifier:

$$\begin{aligned} 120^\circ + 10^\circ + 10^\circ &= 140^\circ \text{ F.} \\ \text{So that by losing moisture, the air} & \\ \text{has been raised in d.b. temperature.} & \end{aligned}$$

PRINCIPLE OF OPERATION

One of the most used dehumidifiers is the Bryant silica gel air dryer shown in Figs. 1 and 1A.

It is designed primarily for use with gas as an activating medium, but can be changed to steam if necessary. The dehumidifier is controlled automatically by a humidistat to supply properly dehumidified air at constant rate.

The silica gel absorbing material is carried in a drum made up of two concentric cylindrical baskets of wire mesh screen. This drum is supported by two shafts which are held in bearings at the end of the machine.

The shafts are rotated by a geared motor, which causes the drum to rotate at about one revolution every seven minutes.

The seals on the inside and outside of drum extend lengthwise and parallel to the drum and separate the machine into two compartments. The compartment of the drum at the right is drying air, while simultaneously the compartment at the

(Continued on next page)

Highly Successful Louisville Contractor

Gives You the "Low Down" on His Sales Success with LAU "Niteair" Fans

Karl J. Daubert, President of the Daubert Electric Company, gives five meaty reasons to which he attributes his outstanding sales and profits success on LAU "Niteair" Exhaust (or Attic) Fans:

1. **STOCK ON HAND.** A large and complete stock for immediate delivery.
2. **TRAINED CARPENTER CREWS.** Trained and experienced carpenter crews operating from trailers equipped with all necessary materials to do a complete installation job (except electrical work).
3. **ELECTRICAL CREWS.** Specialized electrical crews to follow up the installation men and complete the electrical phase of the installation.
4. **ABILITY TO ANALYZE JOBS.** The experience and ability to quickly analyze tough situations in order to give the customer an exact idea of what is to be done and what it will cost.
5. **REFERENCES.** A complete users list so that wherever you are in the city you can point to one of your installations in the immediate neighborhood.

• Fans available for immediate shipment. Jobbers located in every principal city in the country. Find out more about the profit opportunities for you in this readily salable, comfort producing, customer satisfying product.

Write for full information, specifications, prices.

Check THESE LAU FAN FEATURES

All parts — blades, pillow-blocks, pulleys (everything except belt and motor) — are LAU precision manufactured on latest type machines in the modern, greatly expanded LAU factory.

Mass produced for both precision and low cost.

Fan is three-blade type with broad, deep-pitched blades providing greatest suction and air movement, producing maximum air volume with reduced power consumption and air turbulence.

Venturi-type entrance housing "streamlines" air flow. Eliminates most common cause of "air noise."

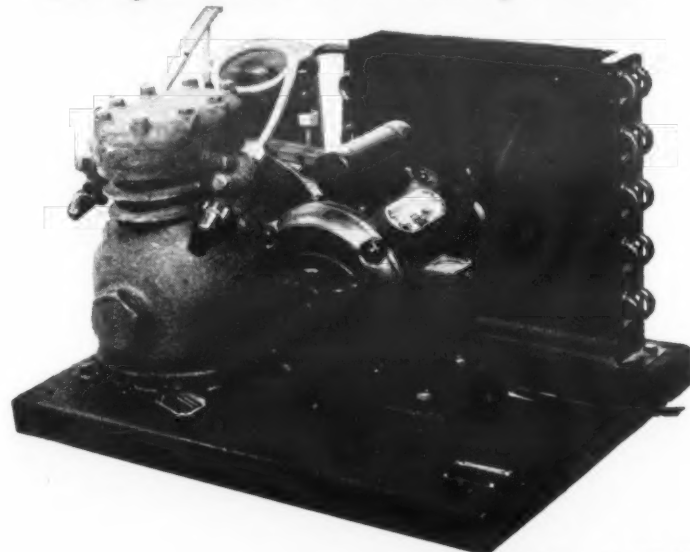
LAU Self-Aligning Pillow Blocks with Duxor Porous Metal Bearings hold fan shaft rigidly, avoiding vibration.

Entire assembly statically balanced.

Five sizes — with discharge capacity for practically every requirement.

Light weight. Reduced shipping charges.

MULTIPLEX Refrigeration Condensing Units



NOW AVAILABLE

Complete with motors in
1/4, 1/2, 3/4, and 1 HP sizes

Inquiries From Jobbers Invited

Multiplex Manufacturing Co., Berwick, Penna.

THE LAU BLOWER COMPANY

Dayton 7, Ohio, U. S. A.

Bryant Heater Co.'s Model 8R Rotary Air Dryer

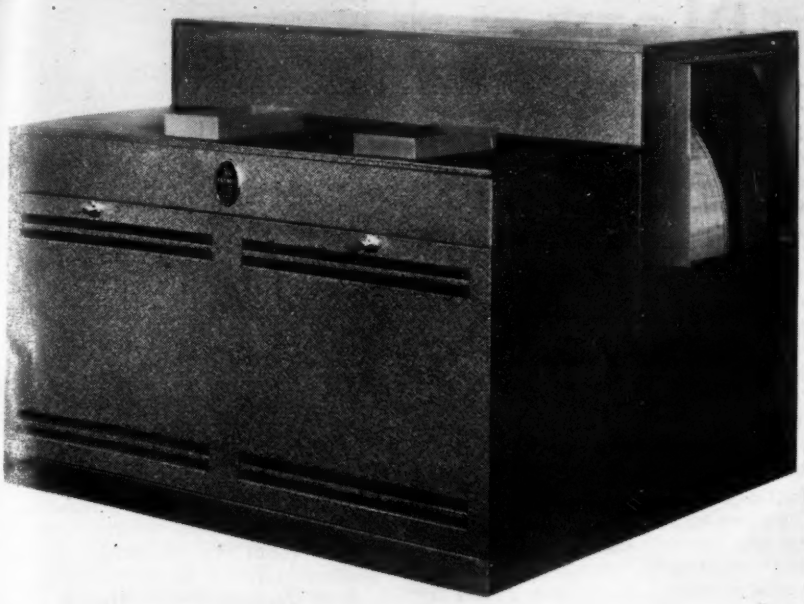


Fig. 1A—This is how the Bryant Heater Co.'s Model 8R rotary air dryer appears from the outside.

Adsorption Units-- Light-Air, Not Drying, Causes Meat To Fade

(Continued from preceding page)

left is being activated or reconditioned.

As the silica gel at "Z" moves from position "Z" to "X" it absorbs moisture from the incoming air, absorbing more and more until it is saturated by the time it reaches position "X." The silica gel then moves into the left compartment, to be activated by heated air, giving up its moisture. The heated air and moisture are taken out by the activated exhaust fan.

The heated air is produced by passing outside air over a gas burner where it is heated to a temperature of 350° F.

When the silica gel reaches the point "Y" all of the moisture required to be removed is out. Passing point "Y" and to point "Z" the silica gel comes in contact with unheated air which is taken around the burner, and the gel is partially cooled preparatory to its re-entering the absorption compartment.

The activation exhaust fan handles the air to be heated as well as the air which is by-passed around burner for partial cooling of the gel. This air is very moist and hot, and must be discharged to the outside atmosphere.

(To Be Continued)

Fiberglass Air Filter Designed To Withstand Heavy Vibration

TOLEDO—A Fiberglass air filter, specially designed to withstand heavy vibration, has been developed by Owens-Corning Fiberglass Corp. for use in filtering dust from the air circulated by the air conditioning systems of railroad passenger cars and other railroad rolling stock.

The filter consists of a pack of glass fibers enclosed in a chipboard container faced on the inlet and outlet sides with a metal grille. Available in standard and special sizes, and in thicknesses of 1, 2, 3, and 4 in., it is of the replacement type, priced to be discarded.

Long service life under heavy concentrations of dust is provided by using a graduated glass fiber pack. A dust-catching adhesive is applied only on the fine fibers.

KENDALLVILLE, Ind.—Light and air together, not drying, will cause meats, particularly cold cuts, to fade, tests conducted by engineers of the McCray Refrigerator Co. and of Swift & Co., meat packers, have shown.

If air is excluded, there is no fading in the presence of light, and vice versa, the scientists found.

From results of tests conducted last year, the McCray firm reported that fading is caused by a chemical change in the meat, with the light or air acting as a catalytic agent. Taste is not affected, it said.

"Results showed that the fading of cold cuts was directly proportional to the intensity of light and that the closer the product was to the light source the more was the amount of fading," McCray stated.

"The fading is effective only on the outside surface of the meat," it added. "For example, in a stack of sliced bologna, only the top surface of the top slice was affected."

The type of light, whether daylight, incandescent light, or fluorescent light, made no difference.

In Swift & Co. tests, fading was noticed two hours after exposure to both fluorescent and incandescent lights. A test piece shielded from light showed no discoloration at the end of eight hours.

A report issued by Swift & Co. stated, "It would appear from the data that table ready meats, cured meat, and fresh meat may be packaged in consumer packages and stored for two days or more in self-serve open refrigerated display cases without significant change, except for a change in color of the cured meats."

"Fresh meat items are very resistant to color change. The discoloration of product appears to be closely related to the amount of light, and the results show that filtering out the ultraviolet light would not solve the problem."

The company stated that its engineers are currently investigating the possibility of using plastic shields over the bulbs illuminating table ready and cured meats in refrigerated display cases to diffuse the light and reduce the intensity.

Remodeled Hardware, Sporting Goods Store Adds Air Conditioning

LINCOLN, Neb.—Lawlor's Sporting Goods-Hardware store at 1118 "O" St. has just completed installation of a 15-hp. Carrier air conditioning system, climaxing a remodeling project which has continued over the past year and a half. John F. Lawlor, senior partner of the firm, is president of the National Sporting Goods Dealers Association.

Air conditioned portions of the 50-ft. frontage, three-story-and-basement building in downtown Lincoln, include the remodeled basement selling floors where the wheeled goods, archery, major appliances, and key, lawnmower, and sporting goods repair and service departments are located; the sporting goods, photographic, hardware, and housewares departments on the street floor; and the balcony which includes general offices, private offices of executives, and a new section set up for buying and selling display, with builders' hardware on one side and athletic goods on the other.

The air conditioning system, installed by Max Lehman, Carrier dealer for Lincoln, has two blower units with a 1-hp. drive in each blower. A single evaporative condenser enables the system to condense the refrigerant without going to storm sewer with the waste water. The amount of water used thus is only 5 to 10% of what would be used normally. The system is good for 16 tons of cooling effect.

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Bulletin 837 Temperature Controls

Give accurate control for a long period because of their simple, rugged construction. The temperature of the surrounding air does not affect the setting. Available in different ranges between -50 F and 500 F with remote bulb and capillary, with immersion bulb, or in a room thermostat. Pilot duty rating is standard but ratings up to 1½ hp at 220 volts are also available.



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Refrigeration products bearing the Larkin insignia may be depended upon to function flawlessly. Originator of the patented Cross Fin Coil, Larkin also installs the same exacting quality in Humi-Temp Forced Convection Units — Bare Tube and Zinc Fused Steel Plate Coils — Instantaneous Water Coolers — Air Conditioning Units — Evaporative Condensers — and other mechanical facilities for efficient commercial and industrial refrigeration.



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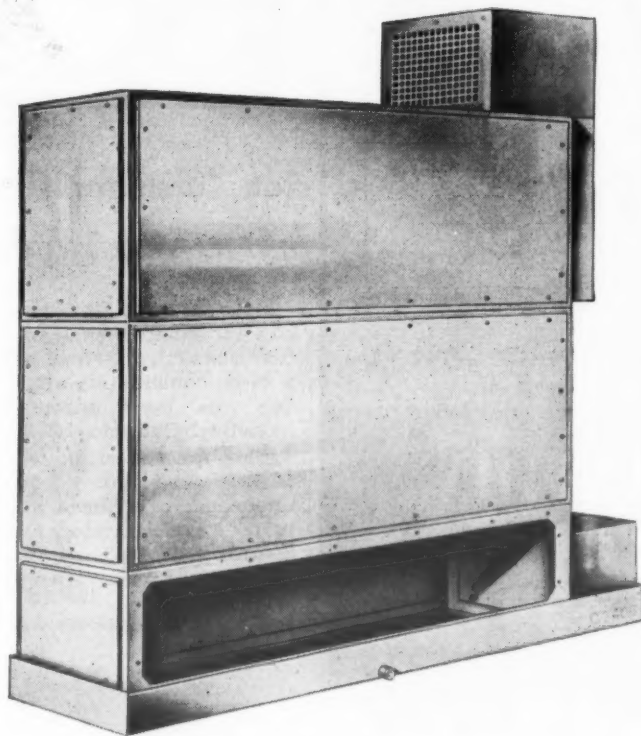
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WORTHINGTON

Air Conditioning and Refrigeration Report

Worthington Pump & Machinery Corporation, Harrison, New Jersey

SAVE 90% WATER COST



NEW EVAPORATIVE CONDENSERS WITH MANY FEATURES FOR EFFICIENCY

Corrosion Minimized—Greatly improved protective treatment guards against costly corrosion. All parts exposed to moisture are of zinc-coated steel, bonderized and coated with a rubber-base enamel containing special rust-inhibiting powder.

Easy to Clean, Stays Clean Longer—Prime surface, with no fins to clog. Accessibility through panel construction to every part makes cleaning simple and fast.

Water Treatment Device—Available for use where water is unusually hard or where corrosives are present.

Made in five sizes, Worthington Series ECZ Evaporative Condensers combine practicability with heavy-duty durability to join the long list of Worthington "firsts" for efficient, low-cost refrigeration. Worthington Pump and Machinery Corp., Harrison, N. J. Specialists in air conditioning and refrigeration for more than 50 years.



Before It's "Southern Fried" It's "Worthington Refrigerated"

Typical of many up-to-the-minute firms supplying the nation's food, the Jewell Poultry Company of Gainesville, Ga., makes Worthington refrigeration an important factor in its processing. Above is the main processing room, where 100,000 lbs. of chicken are prepared daily.



A part of the Jewell Company's storage space, with cartons of chickens ready for shipment. The workers' heavy clothing and the iced-up pipes indicate the low temperature that must be permanently maintained by Worthington equipment to prevent spoilage.



Refrigeration equipment at the Jewell Company. In the right foreground is a Worthington Freon-12 Condensing Unit. In the left rear are three Worthington Vertical Ammonia Compressors. Worthington units of these types are widely used throughout industry.

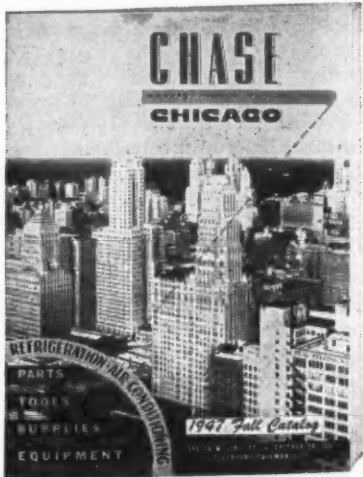
Why Integration?

You get refrigeration and air conditioning at its best when all parts of a system "pull together" smoothly. And remember that Worthington, as makers of so many "inner vitals"—compressors, condensers, turbines, pumps, valves, fittings, etc.—is better able to integrate these essential parts into a trouble-free, economical refrigeration or air conditioning system. It's another reason why there's more worth in Worthington. See your nearby Worthington Distributor for details.

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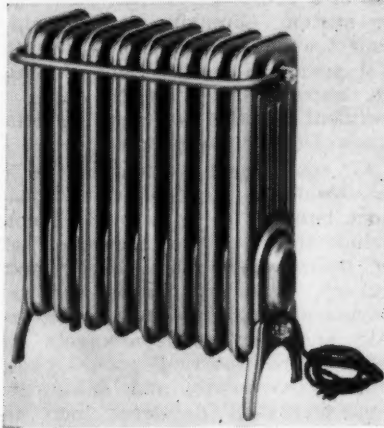
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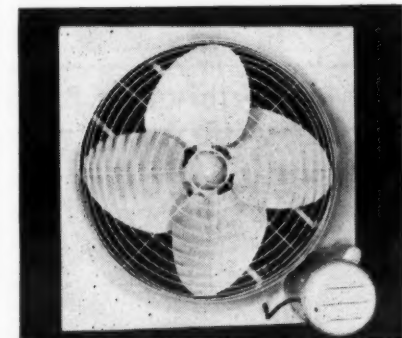


What's New

Electric Radiator Handle Doubles as Drying Rack



Intended primarily as auxiliary heat source, this 8-section, 28½-lb. CO-Z-AIR portable electric radiator produced by Henry J. Morton Associates, Inc., Detroit, heats by both radiation and convection without needing water or steam. Air circulates both around and through inside of each section, distributing heat through room without a fan. It is said to give full heat in 5 minutes, and won't scorch or burn. Enclosed heating element at bottom is "chromel" resistance wire mounted on shock-resistant insulating discs and is claimed to have life of 6,000 to 10,000 hours. Morton says the unit, rated at 110 to 120 volts, a.c. or d.c., as standard, can be operated for about 2½¢ an hour. Legs automatically adjust to uneven floors. Handle also serves as clothes drying rack. Of all-steel construction, radiator reportedly consumes 1,320 watts, emits 4,500 B.t.u. an hour. Also available in 5-section size, and in 8 models.



Fan Connector Eliminates Start-Stop Switch Need

INDIANAPOLIS—Designed primarily for small homes where installation costs must be held to a minimum, a 24-in. combination attic and window fan has been introduced by the Schwitzer-Cummins Co. here.

This fan, latest in the "Fresh-Air Maker" line, can be placed in the upper half of a house window so that it does not interfere with screens, operation of windows, venetian blinds, or with the view, according to Fred

S. Robinson, advertising manager.

No part of the fan extends into the room, he said. The ½-hp. capacitor type motor is located on the outside of the 30 by 30-in. fan frame and is protected from the elements by a ventilated metal enclosure.

It operates on 120 volts, 60 cycles. To deaden all tendency toward vibration, it is floated in rubber strips between the motor frame and the metal enclosure, Mr. Robinson declared.

The fan is called the model PAW 241 and is rated at 4,200 c.f.m. It is fitted with a twist lock connector that is said to do away with the need for the usual start and stop switch.

The entire fan frame and venture ring are formed integrally from one piece of heavy gauge steel, Mr. Robinson stated. A screen guard for the inside is a regular part of the equipment and a safety guard for the outside is optional, he added.

Also optional is a low voltage time switch for automatically shutting off the fan at a specified time.



Compact G-E Sunlamp Unit Can Be Stored Under Bed

BRIDGEPORT, Conn.—A new sunlamp designed to fold away under the bed and featuring a built-in automatic timer has been announced by D. C. Spooner, manager of the General Electric Co.'s automatic blanket and sunlamp division. It will retail for \$29.95, complete with bulb.

The sunlamp employs the war-developed General Electric RS sunlamp bulb to deliver the ultra-violet energy which helps in the formation of Vitamin D within the human system.

Since surveys by the company indicated that 70% of people prefer to use a sunlamp in bed, the lamp is designed for attachment to the bed rail. It can be folded out of sight under the bed when not in use and has a finger-tip action which permits it to be swung up and over the bed.

The built-in automatic timer turns the lamps off when the desired length of exposure has been reached.

The fold-away construction of the new lamp, according to Mr. Spooner, does away with the problem of storage and makes it possible for the user to have the benefits of the sunlamp immediately—without the bother of placing it in position and setting it up.

The lamp fits 90% of the beds now in use; may also be attached to the average chair, table, playpen, or similar article of furniture.

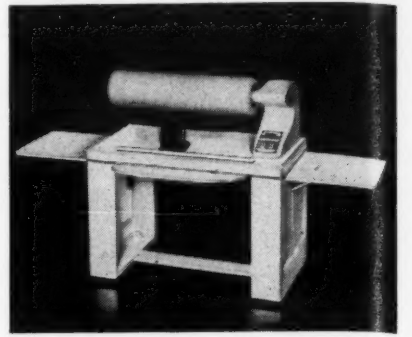
Constructed of bonderized aluminum and finished in baked walnut enamel, the lamp has a gooseneck at the top to permit the rays to be adjusted to any angle. Finger-tip manipulation of the lamp is secured by means of a swivel joint and counter-balancing mechanism. A wire guard protects the bulb.

Bendix Ironer Shoe Ends Can Be Heated Separately

SOUTH BEND, Ind.—A standard model ironer now is in production by Bendix Home Appliances, Inc., according to Harry L. Spencer, vice president in charge of manufacturing.

Simplified operation, comfort for the operator, convenience of control, and complete visibility of both the controls and the ironing are combined in this under-the-roll ironer. With a retractable shoe opening in full view of the operator, the garments are easily placed in position and are ironed as planned.

The convenient position of the



Bendix standard model ironer.

forming board, which is attached to the shoe, permits use of the arms in a natural, comfortable position. In addition to ironing, the Bendix presses and steams.

The shoe can be drawn 4 in. away from the roll. The operator can arrange garments easily. There is ample room for pressing. The shoe surface may be cleaned readily.

Full temperature ironing is assured by location of the shoe directly under the material and the roll. The cast-iron shoe has dual heating elements, separately controlled by thermostats. Either end of the shoe may be heated independently.

Three open ends—two on the shoe and one on the roll—make even intricate ironing simple. Comfortable position is assured, since the ironer height is adjustable to fit the operator. The knee control also is adjustable. Because there is no obstruction at the back of the roll, large pieces emerge from the roll without wrinkling.

The Bendix release bar, extending across the ironer immediately in front of the operator, is readily accessible. A slight touch releases the shoe and breaks the current instantly. Another touch restores the ironer to operation. In case of power failure, the shoe releases and the heat and motor switches turn off automatically.

Dimensions of the standard ironer are 34½ in. long, 18¼ in. deep, 36 in. high. The roll is 25 in. long and 6¼ in. in diameter.

New Ebco Water Cooler Can Serve 75 Per Hour

COLUMBUS, Ohio—A new bottle-type electric water cooler, refrigerated by a Kelvinator system and specially designed for use where plumbing connections are not available, or where bottled-spring water is preferred, has just made its appearance on the market.

A product of The Ebco Mfg. Co. of Columbus, the new cooler identified as model K-4-B is ideal for cup service in offices, waiting rooms, hospitals, homes, retail stores, lobbies, or anywhere people congregate.

Styled along modern lines, the cabinet is finished in antique bronze metallic lacquer, and constructed of heavy-gauge, galvanized and bonderized steel.

The condensing unit compartment is readily reached by removing the lower front panel and maximum ventilation is assured by attractive front corner grilles. Any standard paper cup dispenser can be mounted on the upper right side of the cabinet.

The top of the unit is of brown vitreous porcelain enamel on steel with a black molded rubber bottle gasket that is odorless and does not affect the taste of the water.

Serving approximately 75 persons per hour, the new cooler is equipped with a cooling unit of the storage tank type, which holds 4 qts. of properly cooled water. The tank of seamless stainless steel is completely cooled by flattened, spiral copper refrigerant coils securely bonded to the outside and insulated by a minimum of 2¼ in. of ground cork on all sides, top, and bottom; completely sealed with hydrolene.

Another feature of the K-4-B is an entirely new, light-weight, lift-off type drip receptor of cast aluminum, finished in the same antique bronze metallic lacquer as the cabinet. Designed for utility, it is easy to remove or replace. A stainless steel, louvered, anti-splash tray with convenient lift-out knob adds to its utility. Waste storage is increased to 3 pts. by a quart mason-type glass jar that screws into the rear of the receptor and is concealed inside of the cabinet.

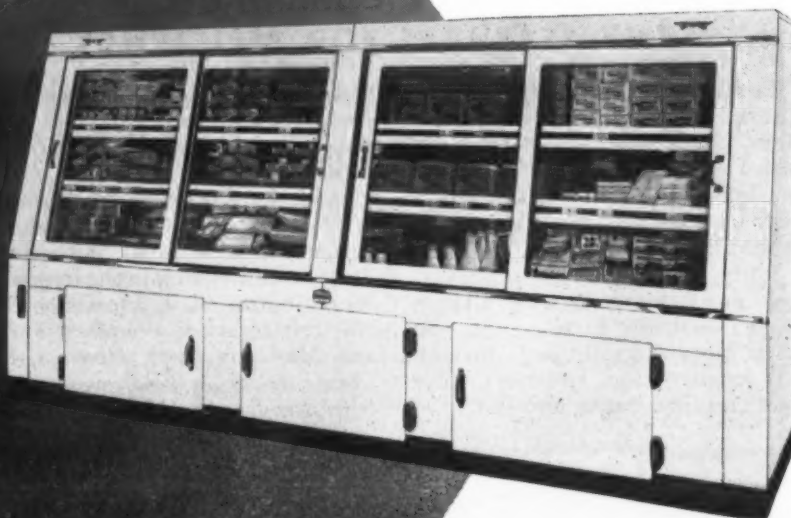
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7 More Like This



Looking over the collector cells on one of the precipitators is the Madison Square Garden's chief engineer, Howard Post. Seven other units such as this will help combat tobacco smoke.

Battery of 8 Electronic Filters Added To Madison Sq. Garden Air System

NEW YORK CITY—What is claimed to be one of the largest installations of electrostatic precipitators under one roof was recently made in Madison Square Garden here, Gen. John R. Kilpatrick, president of the Garden, has announced.

The precipitators, eight units in all, are installed in the ductwork of the Garden's eight new air conditioning systems. They are located between the dehumidifiers and the fans so that all air supplied to the Garden passes through the electronic filters, he explained.

The precipitators, made by the Raytheon Mfg. Co. of Waltham, Mass., thus remove tobacco smoke and cleanse the air, he stated. The filters are said to be able to remove 85% of all dirt particles as small as 1/250,000th of an inch.

They do this by passing the dirt particles through an electrostatic field where the particles become charged and then precipitate onto collector plates, alternately charged with a high positive voltage.

Each precipitator unit has 30 cells and ionizers. The cross section area of each bank of precipitators is 13 by 15 ft.

Each air conditioning system handles 67,500 c.f.m., or a total of 540,000 c.f.m.

Charles S. Leopold, consulting engineer, designed the complete system, according to Gen. Kilpatrick.

Ohio Funeral Home Puts In 3 Airtemp Units

YOUNGSTOWN, Ohio—Temperature Controllers, Inc. here recently installed an air conditioning system in the Hofmeister Memorial Funeral Home.

Three 3-ton Chrysler Airtemp residential units were used, adapting them to the present heating duct system already installed in the basement. Each unit cools an individual chapel and they can be used individually.

These units not only cool but also de-humidify the air, circulate, filter, and ventilate. With this system cut flowers were found to last much longer.

J. E. Hoyal Opens International Refrigeration on West Coast

ROSEMEAD, Calif.—International Refrigeration Co. is the firm name under which James E. Hoyal has published a certificate that he is conducting business at 1624 East Valley Blvd., Rosemead.

Local RSES Group Seeks St. Petersburg Code Data

ST. PETERSBURG, Fla.—Initial steps in bringing about the formation of a local refrigeration and air conditioning code were taken by the Sunshine City chapter of the Refrigeration Service Engineers Society here this summer, K. R. Fogle, secretary of the group, revealed recently.

After hearing a talk on codes by Marshall Johnston of the St. Petersburg building department last July, the chapter decided to appoint a committee to work with Mr. Johnston in drawing up a local code, Mr. Fogle said.

He added that both Mr. Johnston and the chapter had written to other cities requesting copies of their codes to serve as guides for the local refrigeration code.

Standard for Condensing Units Withdrawn at ACRMA-REMA Request

WASHINGTON, D. C.—Withdrawal of commercial standard CS107-45, applying to commercial electric refrigeration condensing units, from the current list of commercial standards has been announced by F. E. Powell of the commodity standards division, National Bureau of Standards.

This action was taken as a result of requests by the Air Conditioning & Refrigerating Machinery Association and the condensing unit product group of the Refrigeration Equipment Manufacturers Association that the effective date for CS107-45 be postponed indefinitely, Mr. Powell explained.

The new standard had been scheduled to go into effect on Sept. 1. However, Mr. Powell said, the standing committee approved a notification that CS107-45 is not to be considered effective as of Sept. 1, 1947 and is being withdrawn from the current list of commercial standards.

New Carrier Installation Will Boost Efficiency In Chicago Lithographing Co.

CHICAGO—Air conditioning for year-round printing efficiency and comfort of personnel is an important feature of the new plant and office building which has been completed for Newman-Rudolph Lithographing Co. here.

Two Carrier machines of 225-ton capacity each are employed for air conditioning, which also automatically maintains relative humidity within 1% of the design figure. Electronic and oil filtering of air has also been incorporated in the system.

Winter heating of the plant is provided by Todd forced draft rotary oil burners with steam radiation at Thermopane windows. Much of the building, however, is windowless. Covering most of a city block, the building has four stories plus a nine-story tower in the center. The Carrier units are located in the tower.

Radiant heating pipes filled with Prestone are buried in the outside unloading ramp which leads to the basement stock room. The pipes are intended to keep the ramp free of ice or snow during the winter.

Paramount Refrigeration Set Up By Chas. & John Kosharek

NORWALK, Calif.—Paramount Refrigeration Co. is the firm name under which Charles R. Kosharek and John W. Kosharek have published a certificate that they are conducting business at 1505 Downey-Norwalk Rd., Norwalk.

Midwest REWA Releases Fall Meeting Schedule

DES MOINES, Iowa—The Midwest Refrigeration Equipment Wholesalers Association will hold its fall meeting with manufacturers' representatives in the Fort Des Moines hotel here on Sept. 29 and 30, L. W. Krueger, secretary, has announced.

Program for the conclave follows:

Monday, Sept. 29

10 a.m. to 12:30 p.m.—Closed meeting for wholesalers.

12:30 to 2 p.m.—Joint luncheon for manufacturers' representatives and wholesalers.

2 to 5 p.m.—Open meeting for manufacturers' representatives and wholesalers.

Tuesday, Sept. 30

9 a.m. to 12:30 p.m.—Closed meeting for wholesalers.

12:30 to 2 p.m.—Joint luncheon for manufacturers' representatives and wholesalers.

2 to 5 p.m.—Open meeting for manufacturers' representatives and wholesalers.

5 to 7:30 p.m.—Cocktail party.

7:30 p.m.—Banquet.

Stone Joins Trion Sales Staff

PITTSBURGH—Trion, Inc., manufacturer of electric air filters, has appointed Lt. Colonel W. Allen Stone as regional sales manager for Cincinnati.

Col. Stone, who until recently served on loan to the National Housing Agency as engineering consultant, is returning to Cincinnati to work in the housing and industrial field.

STAINLESS STEEL REACH-IN REFRIGERATOR

QUALITY BUILT THROUGHOUT

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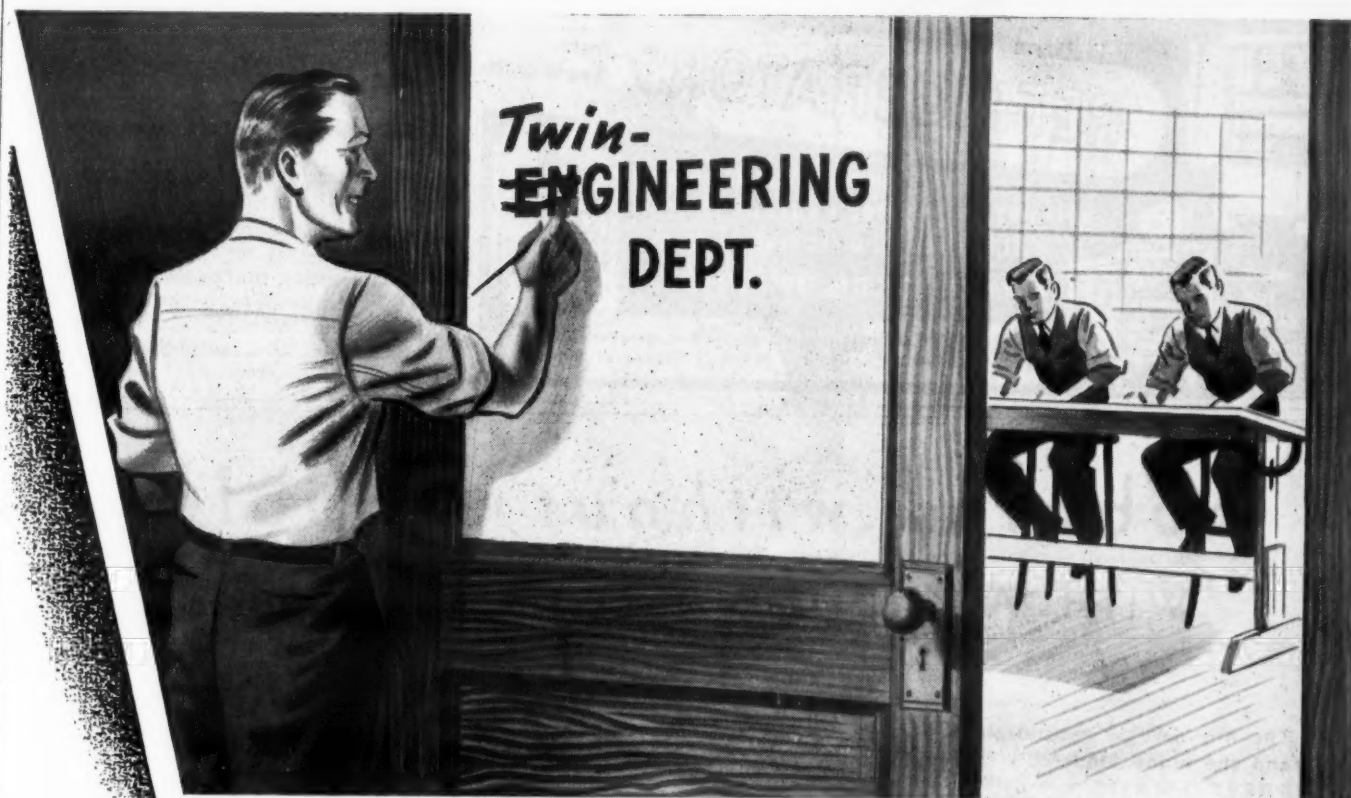
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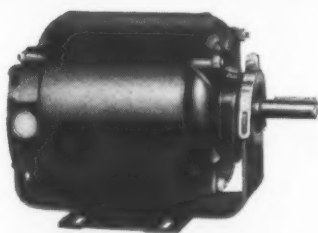
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N. Y. University Courses In Air Conditioning, Heating Begin Sept. 24

NEW YORK CITY—A broad program of courses in building construction, air conditioning, and heating will be offered during the coming fall term by the Division of General Education of New York university.

These courses are given in the evening and are intended primarily for men in the field. There are no formal prerequisites for admission. Classes will begin Sept. 24.

Among the courses are included: Construction Plan Reading and Estimating; Building Codes and Contracts; basic courses in Heating and Ventilating, Air Conditioning, Air Conditioning Design, Elements of Refrigeration, and Plumbing Theory and Codes. These courses are supplemented by a basic program in mathematics, physics, and technical drawing for those not prepared for advanced work.

The program is conducted at the adult level. No college credit is given, but certificates are awarded to students who complete the work of each course successfully. Registration is now going on and will continue until Oct. 3.

Further information may be secured from S. G. Roth, in charge of Technical Program, Division of General Education, Room 211, 100 Washington Square East, New York 3, N. Y.

San Francisco Group To Hear Talk on 'Reefer' Trucking

SAN FRANCISCO—Douglas Albert, chief engineer of the Fruehauf Trailer Co. of Calif., Los Angeles, will discuss "Refrigerated Truck Transportation" in a paper to be presented before the San Francisco section of the ASRE Sept. 19, at the Engineers Club, San Francisco.

This meeting marks the resumption of the section's activities under the direction of Edward Simons, chairman, after the summer vacation season.

Henry Valve Issues First of New Bulletin Series on Product and Application Data

CHICAGO—First in a series of technical bulletins on product and application data, designed to be of educational interest to refrigeration servicemen, was issued recently by the Henry Valve Co. here.

These bulletins, the company declared, will be issued at regular intervals to servicemen through wholesalers handling the company's products and will be of a sufficiently general nature so as to apply not only to Henry products but to other products as well.

The first bulletin discussed the use of driers in sulphur dioxide systems. It quoted a report prepared by the Davison Chemical Corp. on the subject as follows:

"We (Davison) have just completed some rather extensive investigations on the application of silica gel to SO₂ systems, and it is our conclusion that the most satisfactory results will be obtained in sulphur dioxide systems when the silica gel drier is placed in the low side as near as possible to the suction of the compressor because the low side is often under a vacuum which causes moisture to be drawn into the system if leaks exist.

"For the same reason it is recommended that the drier be twice the size of that used in 'Freon' or other refrigerant systems of like capacity that always operate at positive pressure.

"In a sulphur dioxide system silica gel removes both water and sulphurous acid which forms almost

instantaneously when moisture is added.

"In addition to corrosion damage resulting from the formation of sulphurous acid both water and sulphurous acid will react with the oil in the system to form sludge.

"The presence of sludge is very harmful for under the high temperature conditions existing in the compressor, sludge will accelerate the formation of deposits resulting in the binding or 'freezing' of moving parts.

"Copper plating may also occur in sulphur dioxide systems if moisture and sulphurous acid are present.

"Freeze-ups in SO₂ systems due to the formation of ice are not ordinarily encountered because of the high solubility of water in the sulphur dioxide and in the low freezing point of the solution.

"Silica gel driers of suitable size when installed in the low side of the sulphur dioxide system will prevent difficulty resulting from moisture."

The Henry bulletin continued:

"In selecting a drier for this application, please note that it is recommended that the cubic inch volume be twice the size of that used on a 'Freon' system.

"For example, a ½-hp. 'Freon' system would call for a 6-cu. in. drier, whereas the ½-hp. sulphur dioxide system would call for the use of a 12-cu. in. drier.

"In introducing driers in the suction line it is important that the drier be designed for maximum pressure drop."

Wilson Co.'s Eastern Fair Exhibit To Feature Tressler Frozen Food Talk

SMYRNA, Del.—Dr. Donald K. Tressler, nationally known authority on frozen foods, will conduct a demonstration and clinic under the sponsorship of Wilson Refrigeration, Inc., at the Eastern States Exposition, Springfield, Mass., it has been announced by John E. Wilson, Jr., of Smyrna, Del., president of the company.

Appearing in connection with the Wilson exhibit, Dr. Tressler is scheduled to make his presentation to dealers, distributors, home economists, and others at 11 o'clock Wednesday morning, Sept. 17, in Demonstration Hall, which is located in Colonial Village on the exposition grounds.

In reviewing latest research developments in the frozen food and refrigeration field, Dr. Tressler will

discuss: "The Farm and Home Freezer—Luxury of Yesterday—Necessity of Today." He will interpret how food freezing is revolutionizing the public's conception of modern living through convenience and economy.

Mr. Wilson said that tickets for the Dr. Tressler lecture and demonstration will be obtainable at the Wilson exhibit, where the company will display, for the first time, the reach-in "Hi-Boy" home freezer, and other new models and products.

Dr. Tressler, who operates his own food research laboratory in Westport, Conn., has been a consultant on foods and food preservation since 1934, and is the author of seven books on those subjects. His latest book is: "Into the Freezer and Out," a complete handbook on food freezing.

ASRE Revises Shipboard Food Storage Pamphlet

NEW YORK CITY—The application of refrigeration for the preservation of food on shipboard is comprehensively described in a six-page pamphlet, Refrigerating Engineering, Application Data 28, "Refrigeration of Ships' Stores," issued recently by The American Society of Refrigerating Engineers.

This Application Data Section, originally published in 1941, has been extensively revised and additional material added to bring it up to date. It covers the special condi-

tions peculiar to marine refrigeration applications, the load calculation, perishable food cargoes, and some data on air conditioning aboard ship.

The original AD 28 was written by C. B. Albright, engineer, New York City. The extensive revisions have been made by R. A. Chadburn, Heat-X-Changer Co., New York City, and Joseph W. Geddes, resident engineer of Lockwood Greene Engineers, Inc., Seattle. It may be obtained from ASRE headquarters for 30 cents per copy.

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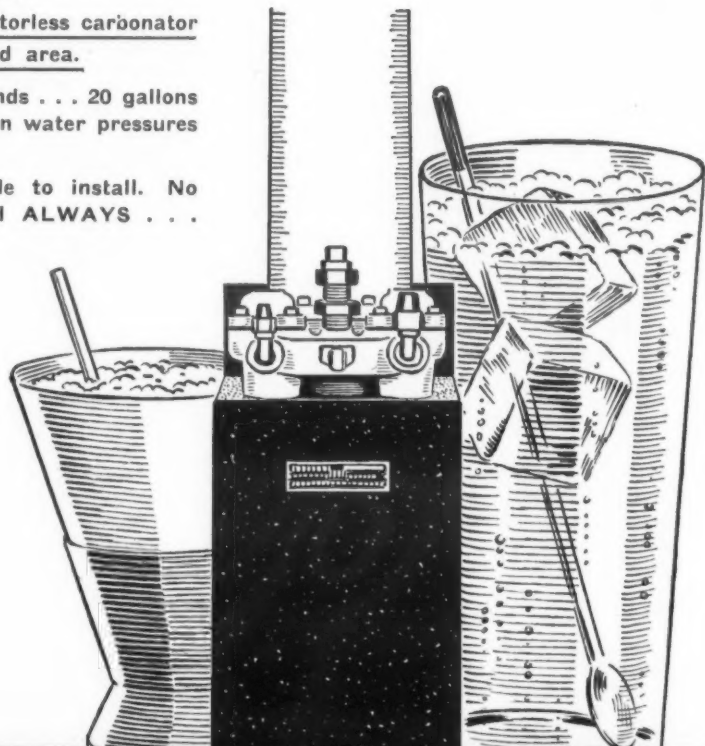
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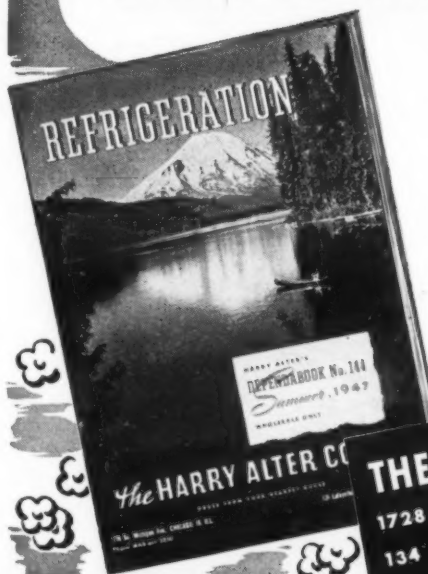
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Refrigeration Problems And Their Solution

By P. B. Reed

For Service and Installation Engineers



Manager, Refrigeration and Air Conditioning Division, Perfex Corp.

Care and Recording of Service Supplies (3)

STANDARD STOCK FOR EACH SERVICEMAN

In organizations where several men are employed, each serviceman is issued a certain inventory of parts, fittings, tubing, refrigerants, belts, oil, etc. This material is charged to him and he is responsible for it. He keeps it in his truck or automobile and uses out of it.

Every day or every other day, he comes into the shop, turns in his service work orders, and is issued replacements for the material he has used from his inventory. Thus he keeps the same amount of stock with him all the time.

PERPETUAL INVENTORY

Most of the larger contractors maintain what is known as a "perpetual inventory" much the same as a wholesaler does. A perpetual inventory means that the withdrawals from and replenishments to the stock are recorded as they happen, so that the exact amount of each and every item in stock is known at all times. This means making a record every time something is taken out of stock and the number withdrawn is subtracted from the former total. Same with replenishments; as a shipment comes in it is put in the bin and the record for that item corrected to show the total amount after the increase.

ASSURES MATERIAL ON HAND

If a big job is about to be installed, it is easy to determine whether all the material is on hand if a perpetual inventory is kept. The material list for the job is simply checked against the cards for those items and if the stock is too small on any one item, a new order is immediately placed.

Another big advantage is that there is less day-by-day chance of being caught short of any particular item. When the card shows that the stock on hand of that item gets down to the "ordering point," an order is placed for an amount that, when received, will bring the amount on hand up to the maximum. This enables the person responsible for controlling stock and for the buyer to know when and how much to order.

SPECIFICATIONS, VENDOR COST, AND LOCATION ON CARD

On the card are also shown the names of the "vendors" (from whom the part may be obtained), how much was paid for the part on the last order and all previous orders and how long it normally takes to get delivery from the time the order is placed (date received less date ordered). The card also shows the specifications for that part and other information that may help in ordering, stocking, and use of the item.

This card also shows the location of the part by Aisle, Row, and Bin numbers in the stockroom, and thus prevents hunting for the parts with the consequent loss of time and money.

Perpetual inventory cards are kept

in a central file in the office and are kept posted by a stock clerk, often a girl. A perpetual inventory system with a central card file as described above has the additional advantage of allowing the management to get a quick total of stock on hand, on short notice, simply by adding all the different card records together.

ANNUAL PHYSICAL INVENTORY

Every year at least—in some organizations every six months, a physical inventory is taken. Every fitting, part, roll of tubing, machine, coil, cylinder of refrigerant, and in fact all salable merchandise, new or used (repaired and rebuilt) is counted, or in case of some items such as small screws, etc., is estimated.

The actual counted inventory is then compared to what the perpetual inventory cards show and it can be determined how accurately the perpetual inventory was kept. Wide discrepancies can be traced and corrections made in the system, if necessary.

At any rate, an annual physical inventory enables the management to definitely determine their investment in inventory, their turn-over on that investment and the interest earned on investment. Also, it enables management to decide whether to decrease or increase their inventory in view of anticipated future business conditions.

A typical perpetual inventory card for a central filing system is shown in Fig. 1. This card could also be tacked or otherwise attached to the

bin, shelf, jar, or rack containing the item listed on the card. The stockman then posts the amount every time he takes a part from the bin or puts in a new supply. Occasionally totals are taken, but a running total is not taken each time a part is taken from or added to the bin, as when the central card system is used.

A somewhat more simple type of inventory card for attachment to the bin is shown in Fig. 2. Something similar to this is often used by smaller organizations. It can also be tied in with a perpetual inventory system.

The service work order may be routed to the stock clerk and he takes off the material used as shown by the S.W.O. and subtracts it from inventory. A copy of all requisitions also go to him for posting on the inventory card; also a copy of all receiving reports and/or purchase orders so that he may add the material received to his perpetual inventory.

There are many systems of keeping inventory. If they enable manage-

Fig. 2. Card for Bin

STOCK ITEM—

Vendor

Part No.

Min.	Order		Max.
	Used	Rec'd.	
		On Hand	On Order

ment to control the amount and turn-over of inventory and if the system gets the materials for installation and service jobs, and, of great importance, if the systems are simple and take a minimum amount of time and clerical help to operate and maintain, they are a tremendous help to the proper management of any business.

Fig. 1. Sample of Perpetual Inventory Card for Central File

Minimum		Order		Maximum		STOCK ITEM—		Location			
								Aisle	Row	Bin	
Vendor—						Vendor—					
Specs.—						Specs.—					
Part No.						Part No.					
Receipts and Withdrawals						Receipts and Withdrawals					
Received						Received					
Date	P. O. No.	Quantity	Cost	Quantity Used	Quantity On Hand	Date	P. O. No.	Quantity	Cost	Quantity Used	Quantity On Hand
On Order						On Order					
Purchase Order						Purchase Order					
Number						Number					
Date						Date					
Quantity						Quantity					
Promise Date						Promise Date					



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low temperature refrigeration. They have set up a new mark for all other freezing units to shoot at. That briefly, is what the Hubbell-Yoder system of Complete Surface Freezing means when the chips are down. Would you like to know how it can be adapted to your requirements? Write, wire or phone.



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The Lubrication of Refrigeration Systems

"There are two general types of lubricating systems designed to furnish the most efficient lubrication for refrigerator compressors:

"(1) In open type compressors the oil is withdrawn from the system. They are usually large horizontal industrial compressors used in ice plants and in industrial processes and are frequently equipped with separate systems for the lubrication of cylinders and bearings.

"In 'open crankcase type' compressors operating in a horizontal position, lubrication is provided by two systems:

"1. Piston and piston rod lubrication is provided by a pressure sys-

tem which injects predetermined amounts of oil to stuffing box gland and cylinder.

"2. Bearing lubrication is provided by lubricating systems such as force feed, gravity or splash.

"Well designed systems are provided with an oil separator on the discharge line which separates the oil entrained in the high pressure gas as it travels to the condenser. If entrained oil in the high pressure gas is carried into the condenser it will adhere to the walls, thereby reducing the efficiency of the condenser.

"A lighter oil is used for cylinders than for the lubrication of bearings, where the oil is exposed to greater

pressure.

"The oil for cylinder lubrication of refrigerator compressors is not consumed to any considerable degree and remains in the cylinders a long time; therefore, any excess of oil should be avoided, otherwise it will form a coating in the expansion coils and decrease the efficiency of the system.

"(2) In closed type compressors, the same oil serves for the lubrication of bearings and cylinders and remains in the system. A heavier grade of refrigerating oil must be used in such machines.

"All industrial compressors, especially those of the older type which have been in service for some length

Editor's Note: This is the second part of an article excerpted from the paper "New Developments In Refrigerant Lubricants" presented by Edgar S. Ross of the Development Division, Sun Oil Co., before the mid-year meeting of the American Society of Refrigerating Engineers.

The information contained in the paper presented by Dr. Ross offers probably the most comprehensive data yet presented on the subject of lubrication of refrigeration systems of all sizes, and air conditioning systems.

of time should be carefully inspected for worn parts and, if advisable, heavier oils should be recommended in such cases in order to avoid an excess of oil from being pumped into the expansion coils and mixed with the refrigerant vapors. This entrained oil can be removed by any suitable oil separator.

"In large vertical or horizontal refrigerator compressors 'pressure lubrication' is extensively used.

"'Splash lubrication' is better adapted to vertical compressors.

"Pressure lubrication permits more accurate control of the amount of oil delivered to cylinder walls and to bearings, but requires considerable piping and frequent attention by the operator, who has to refill the reservoir and regulate the flow of oil.

Mechanical Lubricators

"Cylinders and bearings are extensively lubricated by means of mechanical lubricators.

"A mechanical lubricator consists of a small rectangular tank, divided into several compartments, located at a level above the parts to be lubricated. It is fitted with a plunger mechanism, operated from cams or levers which are connected with some rotating part of the compressor.

"When the compressor is in operation, the plungers pump the oil through check valves into feed lines to certain points in the cylinder walls; to bearings and to all other moving parts. The amount of oil can be regulated by adjusting the plunger stroke.

"Frequently, different grades of oil are contained in the compartments of the lubricator for lubricating of compressor cylinders.

"Force feed lubricators for refrigerator compressors should not be open to the air, in order to prevent moisture from entering the system and freezing at the low temperatures encountered. On the other hand they should meter the lubricant and deliver it regularly to all points to be lubricated in minute predetermined quantities only. The amount supplied by each unit can be seen in the sight-glass.

Danger of Carbonization

"Any excess of oil might tend to cause carbonization at some of the 'hot spots' frequently occurring in large industrial compressors. Care must be taken that the oil feed lines are filled before operation of the compressor begins. For this purpose a manual handcrank is usually part of the lubricator, which can also be operated when it is found necessary to increase momentarily the supply of oil to certain points.

"In large horizontal and vertical compressors with crossheads, internal parts, cylinders, piston, and rods are lubricated by mechanical lubricators with low pour test refrigerating oils, while external parts such as bearings, pins, cross-head guides, governors, etc., are serviced with machine oils by an independent gravity or pressure circulating system.

"In the smaller horizontal compressors, oil is introduced at the top-center of the cylinder.

"In double-acting compressors the oil is introduced in the middle of the cylinder and the piston covers the oil parts during its travel. Automatic valves keep the oil in the feed lines by checking back pressure during the compression stroke.

"In some systems the 'injection

method' is used. The oil is injected into the suction line and a spray of oil is carried into the cylinders by the flow of gas and forms a film of oil over all exposed surfaces. This method is rather wasteful and there is always danger that excess oil will cause sticky valves.

Oil Protects Stuffing Boxes

"In practically all compression machines with reciprocating parts, the oil serves also as a seal in the stuffing boxes. Hot ammonia gas has a very bad effect on the packing of stuffing boxes and sufficient lubricating oil should be used to prevent overheating.

"Piston rods must be properly lubricated to prevent wear and leakage of gas. Lubrication is accomplished in a stuffing box with oil seal. Generally an 'oil lantern' is located between two sets of packing; they are hollow spaces surrounding the rod into which the oil is pumped through an opening from a reservoir.

"From the lantern the oil flows through the packing; another opening from the lantern is connected with the suction side of the compressor and any gas which leaks by the packing rings is returned to the cylinders. A well lubricated piston rod is bright and smooth and covered with a thin film of oil.

'Lantern's' Added Function

"In some types of double acting compressors the 'oil lantern' serves also to feed the lubricating oil to the compressor cylinder. The oil penetrates past the piston rod packing, at the same time protecting the packing from the bad effects of the ammonia.

"Ammonia and carbon dioxide compressors are very similar to each other as far as construction and operation are concerned. The working pressure of carbon dioxide compressors is higher (from 900 to 1,000 pounds) and consequently the cylinder temperatures also are higher.

"In both types of compressors the lubricating oil must stand up under severe service. It must not carbonize at the high temperatures in the cylinders and must have sufficient body (viscosity) to supply a protective film on all frictional surfaces. It must readily drain into the traps at the low temperatures of the refrigerating systems.

"Where CO₂ refrigerating machines are operated in the production of dry ice, a white oil may be furnished. Dry ice is frequently used in direct contact with food products and for this reason some operators insist on a water-white oil which will have no effect on the odor or color of the dry ice in case an appreciable amount of oil should pass the traps and mix with the dry ice. To avoid such possible contamination of the dry ice, some operators are willing to sacrifice the slightly better lubricity of the pale oils.

"Most industrial refrigerating systems are equipped with oil separators to aid the separation of the oil from the refrigerant, or oil interceptors located between discharge valve and close to the condenser. They are generally cylindrical tanks, with baffles and a sight gauge glass to indicate the level of the oil.

"Any particles of oil mixed with the gas after it has left the compressor, are precipitated in the separator. If the refrigerant is much lighter than the oil and not miscible with it,

(Concluded on next page)

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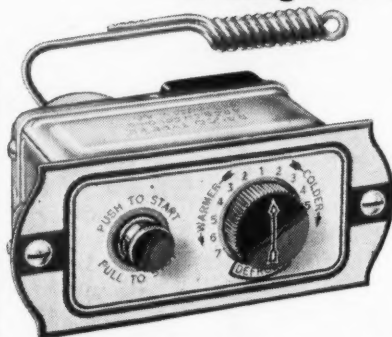
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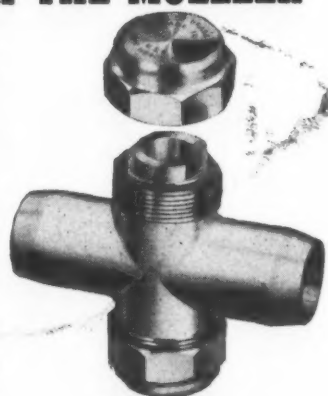
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E. S. Ross Discusses Various Methods Of Lubricating Refrigeration Compressors

(Concluded from preceding page)

the oil will separate by gravity in the receiver.

"Every compressor manufacturer has his own system of lubrication or a combination of systems, which serves his equipment best. For instance, we find in some older types of steam driven horizontal refrigerator compressors, a splash system for cylinder walls and piston lubrication and oscillating mechanical lubricators for lubrication of external parts.

"In some of the latest models, oil is pumped from the crankcase into a sump and from there circulated under pressure and returned through filters to the crankcase; a mechanical lubricator forces engine oil to bearings and cylinders and in a third system lubricating oil is also used to regulate the operations of the governors with automatic cut-off.

Chain-Driven Oil Pump

"An oil pump, chain-driven from the main shaft, takes suction from the crankcase and forces oil under pressure, acting against the governor plunger. The oil pressure is increased or decreased by the variation in the steam pressure and speed of the compressor, causing a movement of the rack and weight which is part of the governor, and by means of a diaphragm-operated valve which bypasses part of the oil flow. The change in oil pressure thus effected controls the speed of the unit according to load demand.

"Another modification of force-feed lubrication on large industrial compressors embodies a chain-driven gear pump which furnishes positive pressure lubrication. Oil from the reservoir enters the pump intake through a strainer and is discharged from the pump to a screen type filter which can be cleaned while the compressor is operating. Before being distributed to the bearings, the oil is passed through an oil cooler, assuring cool, clean oil for all bearings.

Excess Oil By-Passed

"The oil is distributed through drilled passages or oil lines to the bearings, cross-head pins, guides, etc. Excess oil from the pump is bypassed to the main reservoir or to the oil sump by a relief valve.

"Automatic devices stop the compressor in case of oil pressure failure from any cause.

"A new compressor requires more oil for cylinders and bearings until it is well 'broken in' and the surfaces requiring lubrication have become smooth and coated with an oil film. It is advisable to drain all the oil and clean the crankcase carefully of all dirt, metallic particles, lint, etc. and refill it with clean, fresh oil.

"After the compressor has been started again and is running, the oil level in the reservoir should be carefully watched and oil added until the oil level is several inches above the intake pipe; this is marked as the 'low level' when the compressor is running.

Marking Lubricant Levels

"If the compressor is shut down and the oil has drained back into the reservoir, the oil level is marked as 'low level—idle' and after adding oil another level is established for 'high level—idle.' After the compressor is started again the resulting oil level is marked as 'high level' (running).

"Frequency of change of oil depends on operating conditions and time-efficiency of operation. Most manufacturers of large heavy-duty compressors recommend oil change at least every 90 days.

"Instruction books furnished by each manufacturer should be studied and followed carefully by the lubricating and operating engineer.

"Smaller industrial and com-

mercial vertical refrigerator compressors have enclosed crankcases. Cylinders, piston and bearings are lubricated by a splash or circulating system. In the 'splash' system the refrigerating oil (for cylinders and bearings) is stored in the crankcase at such a level that the crank dips into the oil at every revolution and splashes a sufficient amount of oil spray to the cylinder walls, pistons, etc.

Precipitation Hampered

"An excess of oil in the crankcase would cause violent agitation or churning of the oil by the crank, which would prevent precipitation of any foreign matter which might be in the system and could have a detrimental effect on the lubricating oil. Such excess oil might also enter into the condensing and evaporating system and cause operating difficulties of the entire refrigerating machinery.

"Refrigerating oil for splash systems must have sufficiently high viscosity at compression temperature to prevent excess oil consumption. Too light an oil will pass by the piston rings. Since air can enter into commercial refrigerating systems, the oil must be resistant to oxidation and very stable, in order to reduce formation and deposition of carbon and gum to a minimum.

"Such excess oil could also work its way into the cylinders and past piston rings (especially if the latter are worn or not fitted tightly) to get into the refrigerating lines and prevent efficient operation of the oil separator.

Foaming In 'Splash' System

"During the earlier stages of development of domestic and smaller commercial units 'splash lubrication' was the system most commonly used. Some trouble occurred due to 'foaming' in reciprocating compressors installed in these smaller units.

"Foaming is invariably caused at the start of the cycle when return gas has been absorbed in the oil and is suddenly released as the compressor starts lowering the pressure in the crankcase. There is always danger that the foam topping the oil level in the reservoir might cover the suction valve and be carried over to the high side of the compressor with the refrigerant and cause serious difficulties.

"This experience led to efforts to develop several systems of 'pressure lubrication' in order to obtain positive circulation of the oil through the compressor, which would practically eliminate 'foaming.'

Similar to Auto Lubrication

"One type of pressure lubrication is very similar to the lubrication of an automotive engine by an immersed gear pump in the crankcase.

"The pump always has positive suction, being located below the oil level in the reservoir or crankcase, and discharges the oil under pressure (regulated by the speed of the gears) through small feed lines to the cylinder walls, or through drilled passages to the bearings and other parts to be lubricated.

"After forming the required protective film, the surplus oil returns to the crankcase by gravity and is recirculated.

"Another type of pressure lubrication makes use of a 'rotary' pump. Two blades moving in a slotted rotor perform the 'pumping' of the oil which is carried in a reservoir in the base of the refrigerating unit. The oil is lifted from the reservoir through drilled passages in the motor shaft and distributed to the bearings and to the cylinder walls.

"In some units part of the oil is used to cool the windings of the motor before returning to the sump.

"Another system applies 'splash

lubrication' to lubricate the cylinder walls, and a reciprocating pump with a single oscillating cylinder operated from an eccentric on the end of the crankshaft, for the lubrication of main bearings and through drilled passage ways and tubing to all other bearings.

Medium Units Use Force-Feed

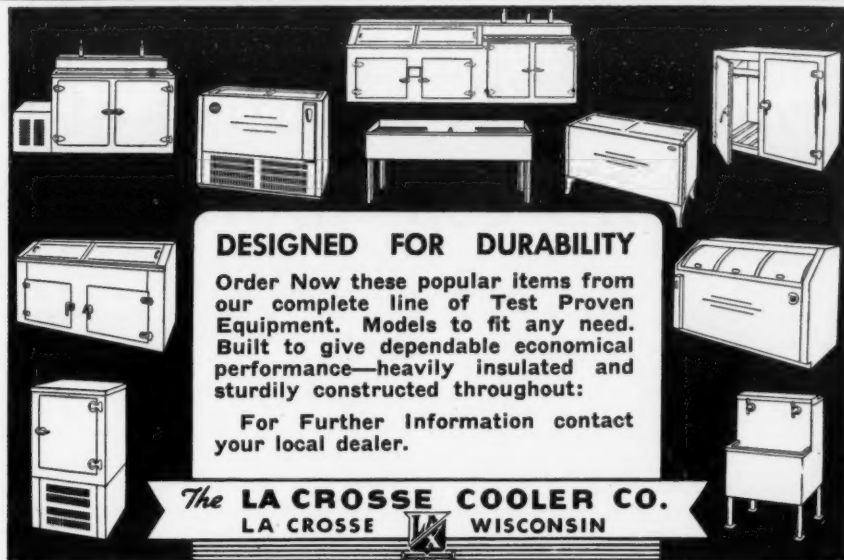
"In medium-sized industrial refrigerator compressors, bearings, crank pins, guides, etc. are lubricated by a splash or force feed lubricating system. Large industrial horizontal or vertical refrigerating compressors use an independent gravity pressure circulation or force feed lubricating system.

"A gravity circulating system generally has an oil reservoir at a higher level from which the oil flows by gravity to the different bearings; from there it drains to a lower reservoir and is pumped back through a screen or filter (to remove any impurities) to the upper reservoir and used over again. If the oil is contaminated with water it should go to a separator before it is pumped back to the reservoir.

"In the force feed lubricating system, oil is pumped to the bearings from a central reservoir and it drains back by gravity to the reservoir. The same precaution for cleansing the oil should be taken as in the gravity system.

"In commercial units of small tonnage, 'splash-lubrication' is mostly used for the enclosed type vertical reciprocating compressor.

"In large central systems 'pressure lubrication' is used in the large type horizontal and vertical compressors for the lubrication of cylinders and piston rods, etc."



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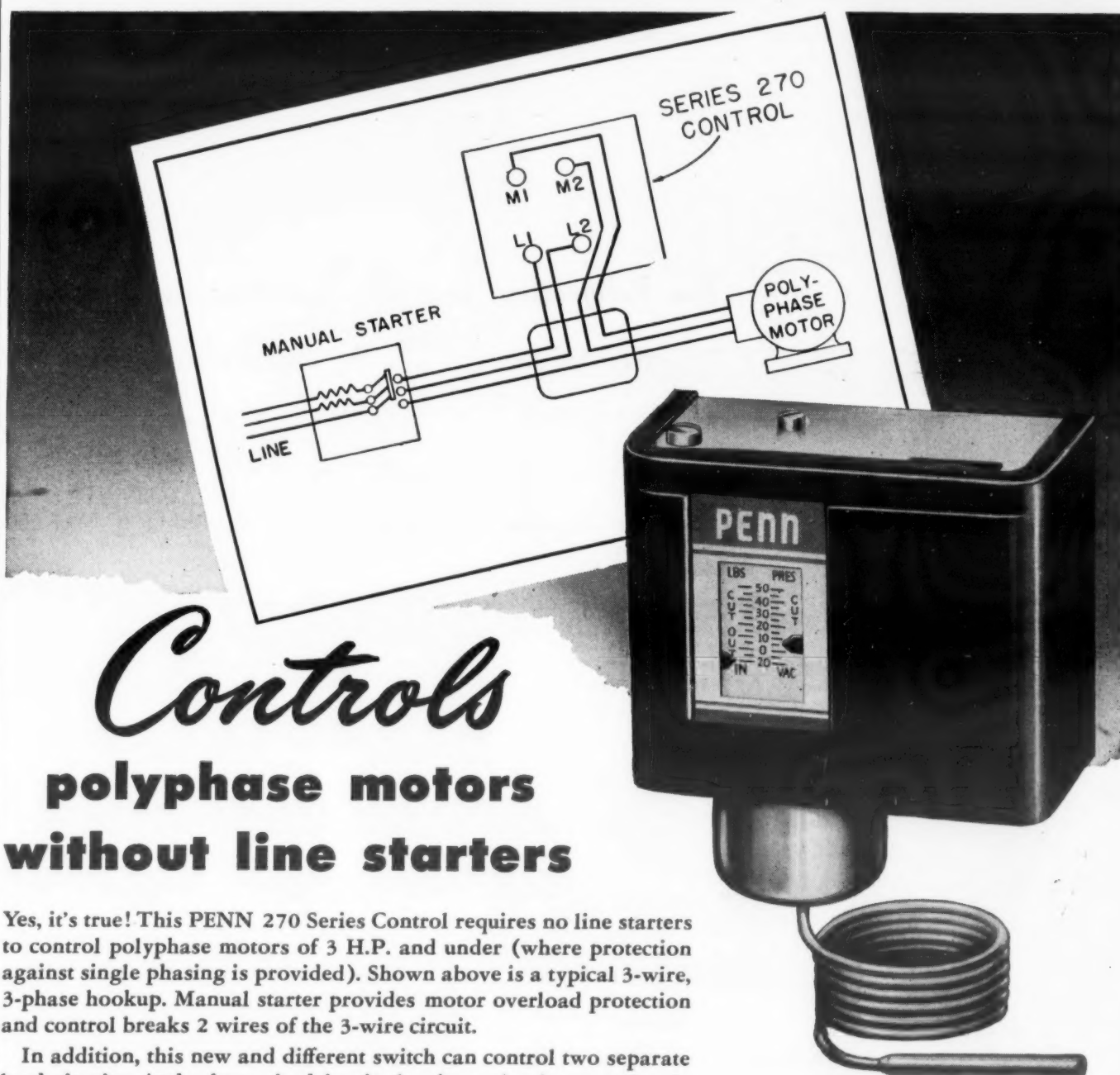
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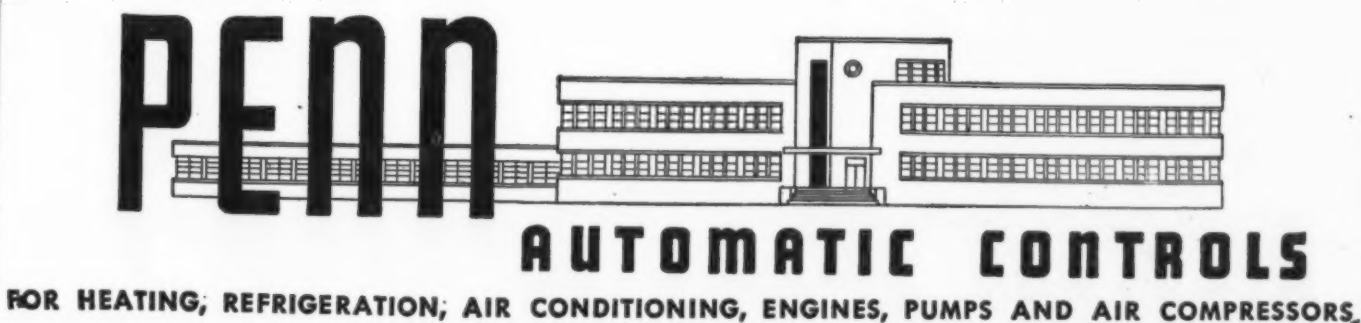


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Producing Two-Thirds of World's Supply U.S. Still Needs More to Meet Demand

NEW YORK CITY—"The question of future oil supply, long recognized as a major national problem, has taken on even greater importance as a result of the war. Although certain past predictions based on existing trends and known reserves have proved unreliable, recent developments seem to have strengthened the prospect that this country must eventually face the alternative of depending on foreign sources of supply or relying on higher-cost substitutes for natural petroleum," states the Guaranty Trust Co. of New York in the current issue of *The Guaranty Survey*, its monthly review of business and financial conditions in this country and abroad.

"Total proved world reserves appear to be more than adequate to meet demands for a long period, but the distribution of these reserves has been radically altered in recent years. From the point of view of the United States, the central fact is that domestic reserves are being drawn upon nearly three times as fast, proportionally, as foreign reserves.

"Past experience indicates that the

outlook could change greatly as a result of unexpected discoveries or other developments. Meanwhile, however, the industry is proceeding on the basis of known facts and is preparing for the use of new processes to supplement existing supplies at the lowest possible costs.

"The production of liquid fuel and other products from natural gas on a commercial scale is expected to begin within about a year, and there is authoritative opinion to the effect that high-grade motor fuel can be produced in this way at a cost comparing favorably with that of similar fuel from crude petroleum.

"Reserved for use in the not too distant future is the application of like processes to coal, shale, and other carbonaceous materials. These processes give eventual promise of very great and reasonably economical additions to the oil supply.

"Production in the United States continues at about two-thirds of the world total. The present rate of more than 5.1 million barrels daily not only exceeds all previous records but is more than one-third above the 1941

level. Yet it is barely sufficient to keep pace with a current demand that is at the annual rate of 8% of reserves. At this rate our reserves are being drawn upon faster than those of any other major producing nation.

"Reserves increased from 20.1 billion barrels in 1942 to 24.2 billion in 1946, largely because of the inclusion in the latter year of 3.3 billion barrels of natural gasoline and condensate not reported formerly. Although the increase in reserves has been small, the total has been maintained despite the rise in production and shortages of manpower, materials, and equipment for drilling.

"As in the case of crude oil, the United States has maintained its position as producer of approximately two-thirds of the world's total volume of petroleum products. All but a small fraction of the refining and manufacturing capacity is domestically owned. Capital expenditures during and since the war have been large and have been devoted for the most part to the addition of catalytic cracking units. This development has

resulted in only moderate expansion of over-all capacity, but it has greatly increased the flexibility of the refineries and has permitted the production of a higher percentage of middle products at the expense of fuel oil, besides making possible a great increase in the yield of gasoline if desired.

"It was anticipated that with these changes, accompanied by normal additions and improvements, no difficulty in meeting postwar requirements would be experienced. The present great and generally unforeseen demand, however, is in excess of operating capacity in some districts, especially in the Middle West. Runs to stills are at a new peak, exceeding the 1946 average by 8.5% and that for 1939 by 50%.

"Transport conditions vary widely in the different parts of the country. Tankers, which supply about 95% of the demand on the East Coast, are available in ample numbers. The interior pipe-line system, on the other hand, is inadequate because of the impossibility of obtaining sufficient quantities of additional pipe and is being supplemented by the use of high-cost tank cars.

"Although total foreign production last year was 37% larger than in 1938, output abroad has not maintained the prewar average of about two-thirds of that in the United States. Outstanding increases in Venezuela and the Middle East have been more than offset by declines in Russia and the Far East.

"Unlike production, foreign proved reserves are at least 1.8 times as large as those in this country.

"Foreign reserves, about 35% of which are American-owned, have increased by approximately 270% in the last decade to 43.5 billion barrels, while reserves in the United States have risen about 56% to 24.2 billion barrels (or 20.9 billion exclusive of natural gasoline and condensate).

"The average production per well varies widely in different areas. In the United States an average of 112 barrels a day was produced in 1946, as against a reported average of 280 barrels for a leading producer in Venezuela and a range from 5,000 to 10,000 barrels for most wells in the Middle East.

"The major international oil companies, both American-owned and foreign-owned, have embarked on projects for refinery construction, estimated to cover a five-year period, that greatly exceed those for the United States.

"It is extremely doubtful, however, in view of shortages and political uncertainties, whether all these plans will be carried out within the five-year period. If they are, refinery runs will be increased by about 1.2 million barrels daily. This is equivalent to an increase at the rate of 10% a year for five years, as against a rate of increase of about 18½% in the 10 years preceding the war.

"Important construction is now under way in the Middle East, Far East, Venezuela, England, and France. With the exception of refineries in the United States and the Middle East, and the two giant plants on islands off the coast of Venezuela, there are few refineries that are not urgently in need of modernization."

Oil Heat Institute Raps 'Short Supply' Warnings

NEW YORK CITY—Advertising which warns prospective users of fuel oil for heat to seek a written contract for their full winter fuel requirements before they purchase oil heat equipment was criticized recently by A. E. Hess, manager director of the Oil Heat Institute of America.

In an institute bulletin, Mr. Hess declared that such advertising designed to explain to the public that the shortage of fuel oil was caused by a shortage of transportation, was asking the user to "attempt the impossible, particularly at this time.

"It has never come to our attention that any fuel oil supplier has regularly given a firm guarantee of the season's fuel oil requirements, Mr. Hess stated. "Contract forms which have been in use up to this time carry a moral obligation on the part of the supplier but, we think, never generally a penalty clause to back up a guarantee.

"The suggestion of guaranteed full requirements is, therefore, in my opinion, the equivalent to a recommendation that prospective buyers do not buy oil heating equipment.

"If this suggestion was generally presented in the recognized oil burning areas throughout the country it would become the equivalent of an attempt to freeze the equipment side of the industry with the implication that it could be waked up at some later date, doubtless under easier transport conditions, and pick up where it left off.

"That would be both unnatural and impossible and would be, furthermore, definitely detrimental to the industry as well as the economy of the country.

"Nothing remotely approaching any such handling was included in the recommendations of the OHI fuel oil supply committee, to which the board of directors subscribed at their last meeting.

"In the present transportation difficulties, affecting all petroleum products, we have not seen any advice or suggestion in any form that prospective purchasers of new automobiles seek a guarantee of their gasoline needs before they buy a new car.

"Why single out oil burning equipment and its prospective users for special attention and handling?"

Mr. Hess said that the institute's policy embraced doing everything "reasonably possible to assist fuel oil suppliers in overcoming the transportation difficulties."

This included, he said, recommending increased burner efficiencies on present installations, installing new equipment so as to give highest possible efficiency, and putting into use every available fuel storage tank adaptable to storing burning oils.

The Refrigeration and Air Conditioning Directory

goes to press . . . In Just Two Weeks!

The last date we shall be able to accept advertising is Sept. 30.

Better write your ad copy now, and avoid an annoying last minute rush.

And make that copy count. It will be competing with the best in the business.

Rates and mechanical requirements will be sent by wire on request.

CIRCULATION 20,000

ADVERTISING CLOSING DATE SEPT. 30

Rulings on Recreational Installations--

(Concluded from Page 1, Column 3)

the same establishment is operated primarily for an exempt purpose and only incidentally for recreation or amusement. Here, the cost of a job is calculated for only those parts of the establishment to be used primarily for recreation or amusement.

"For example," the rule explains, "if the primary purpose of an establishment is the serving of food, and alcoholic beverages are served only incidentally, the cost of a job is found by adding the following amounts:

"The cost of the bar fixture and its installation. The cost of any other general construction required for the operation of the bar, including the cost of service lines such as wiring, piping, etc., which are used specifically for the bar.

"The cost of other attached fixtures used primarily in connection with the serving and consumption of alcoholic beverages. The pro-rated construction cost of the space used for dispensing of alcoholic beverages, and of the space used primarily for consumption of alcoholic beverages."

HOW TO DETERMINE COST

Four steps are then given for figuring the pro-rated construction cost: "First. Compute the total cost of all construction work on the entire building, or part of the building, used for this establishment (excluding the cost of the bar fixture and items covered by paragraph (g) (3) of this section).

(Items referred to include refrigerators, showcases, soda fountains, and water coolers.)

"Second. Compute the total floor area used by the establishment (excluding basement, storage space, or other space not used directly in the operation of the establishment).

"Third. Compute the floor area used primarily for recreational or amusement purposes (including the area used for the bar, the back bar, and any other facilities serving the bar; the area 5 ft. outside the limits of the bar; and any space used primarily for the consumption of alcoholic beverages (such as a cocktail lounge, tavern, bar room, etc.).

"Fourth. Divide the floor area used primarily for recreational or amusement purposes by the total floor area of the establishment, and multiply this ratio times the total construction cost to get the desired pro-rated construction cost of the space used for the dispensing and consumption of alcoholic beverages."

What part or parts of such dual-purpose buildings are covered by CLR is explained in other new rules.

"If one part of a building contains an establishment which is operated for or in connection with a recreational or amusement purpose listed . . . and another part . . . contains an entirely separate establishment used for a purpose not covered by this section, this section covers the first part of the building but not the second part," one rule reads.

"If a third part . . . (such as halls, stairways, toilet facilities, store front, heating and ventilating equipment, and similar facilities) is used jointly for the recreational or amusement purpose and the exempt purpose, this section covers any of the joint facilities that are used primarily in connection with the recreational or amusement purpose.

"If a building, or part of a building, is used both for a recreational or amusement purpose and for an exempt purpose, and the two activities are parts of the same business establishment," the second rule states, "this section covers the entire building or part of the building which is occupied by such establishment.

"Therefore, unless the work is exempt . . . no person may do any construction work on that particular part of the building until he has filed an application . . . and has received a construction permit or a letter of exemption. . . .

"A letter of exemption will be issued to the applicant, if on the basis of the facts submitted . . . the Housing Expediter determines that the recreational or amusement purpose is not the primary purpose of the applicant's establishment."

In determining whether an establishment is to be used primarily as a restaurant, or primarily as a bar room, cocktail lounge, night club, or tavern, the Housing Expediter will consider the following factors, according to the regulation:

Area and serving capacity of kitchen facilities; size of bar; total seating capacity and seating capacity for customers purchasing alcoholic beverages only; facilities for entertainment; number of employees preparing and serving food, number preparing and serving alcoholic beverages, and total number of employees; percentage of gross receipts resulting from service of food, and from service of alcoholic beverages; hour of the day at which establishment opens for business; and other relevant factors.

TERMS FURTHER DEFINED

In the part of the regulation defining the types of structures affected, a bar serving alcoholic beverages now includes a "service bar" in a restaurant or similar establishment; a bathhouse for swimming and swimming pools include private and commercially operated bathhouses and pools, but not those operated by a governmental agency or instrumentality, an educational institution, or a church; and a night club includes both sellers and non-sellers of alcoholic beverages.

Structures used for a dance floor and stand for dance orchestra (restaurant or other establishment), fraternal organization or lodge, and outdoor dance floors and skating rinks have been added to this section.

A change in the section dealing with exemptions makes it unnecessary to get a permit to do any work

Strong Contractor Group Functions In State of Washington



One of the most active state associations in the refrigeration contractors organization is the Refrigeration Contractors Association of Washington, Inc. Organized early this year, the group now has between 75-100 members and operates through five regional groups, each of which holds a regular meeting each month. Above picture was taken during the first statewide meeting of the group this summer, at which National President Warren W. Farr was principal speaker.

on buildings or other structures for use in connection with a state or county fair.

Also, this section now includes a definition of a separate building. This was apparently included to clarify the statement that "work done on two or more separate structures is not considered one job, even if done as a part of a single plan.

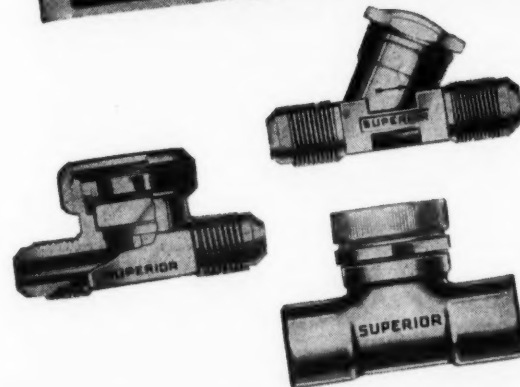
"In order for a building to be considered a separate building . . .

it must have a separate foundation or base, a separate roof, and four walls," it is stated. "In a group of buildings to be used for the same general purpose (such as an amusement park, race track, or the like), each building must at every point be separated from adjacent buildings by a distance at least as great as the customary width of a public passageway."

This section has been amended

further to include the provision that the cost of a job "may not be broken up to bring it within the \$2,500 (or \$200, if applicable) small job exemption."

A person who has been issued a permit under CLR or an authorization under VHP-1 and who wishes to have the permit or authorization amended should file a new application on Form OHE 14-171, according to another amendment.



SUPERIOR VALVE & FITTINGS COMPANY

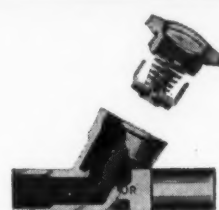
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OFFICES IN PRINCIPAL CITIES • STOCKS: CHICAGO (6), LOS ANGELES (15) • JOBBERS EVERYWHERE

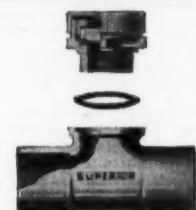
SUPERIOR CHECK VALVES—unique design, positive acting, spring-operated—cannot chatter, hum or buzz under any normal operating conditions. Pressure drop is negligible. Install one in the suction line of each low temperature circuit of all low temperature jobs—your assurance of maximum performance and trouble-free operation.

SUPERIOR LIQUID INDICATORS—call them liquid indicators, sight glasses, or refrigerant shortage detectors—one should be installed in the liquid line of each system. Seal cap over sight glass is double assurance against damage and leaks.

Note these exclusive features



The novel design of these SUPERIOR Check Valves permits the easy removal of all internal parts—as a unit—while soldering lines to valve connections, or for subsequent inspection.



Entire upper assembly of SUPERIOR Liquid Indicators—in all sweat sizes—may be removed as a unit to preclude damage by heat while soldering lines to body connections.

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Assure your LEADERSHIP with . . .



IDEAL "Speed-Freeze" BEVERAGE COOLER

For those who want the best in beverage coolers, this new 8 ft., self contained, under bar plug-in type with 28½ case capacity. Beautifully designed with a corrosion-proof stainless steel slide top . . . this beverage cooler lives up to the long-established IDEAL reputation for unmatched quality.



IDEAL "Speed-Freeze" DRAFT BEER COOLER

The patented, unmatched performance of this Draft Beer Cooler is nothing short of sensational. No matter how warm the beer is upon delivery you may draw it instantly . . . and draw it right . . . at any temperature you desire! Its refrigerated faucets, foam control and flusher make it a favorite with customers, breweries and beer distributors. Available in 2 and 3 half barrel capacities, self contained or remote. Fits under any standard bar.

IDEAL Speed-Freeze PRODUCTS

PROVED BY PERFORMANCE

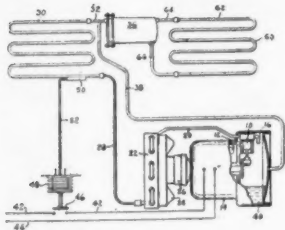
Manufactured to the highest quality standards, IDEAL "Speed-Freeze" products satisfy the most exacting buyers! Designed and engineered by specialists with a long-established record in the beverage cooling field, IDEAL "Speed-Freeze" coolers provide the maximum in operating efficiency and years of outstanding service. For available distributorships, write us today.

IDEAL COOLER CORP. 2953 EASTON AVE., ST. LOUIS 6, MO.

PATENTS

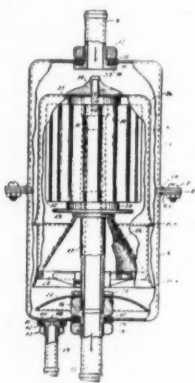
Week of June 10

2,421,773. HEAT EXCHANGE APPARATUS IN REFRIGERATION SYSTEMS. Leslie B. M. Buchanan, Springfield, Mass., assignor to Westinghouse Electric Corp., East Pittsburgh, Pa., a corporation of Pennsylvania. Application Dec. 29, 1943, Serial No. 516,006. 5 Claims. (Cl. 62-115.)



3. Refrigerating apparatus comprising a primary system including a first evaporator, a second evaporator forming a header, a passageway connecting the first and second evaporators, a casing containing a compressor and lubricating oil, a tube connecting said second evaporator with said casing, a condenser receiving compressed refrigerant from said compressor, a conduit connecting said condenser with said first evaporator, a thermostat for starting and stopping said compressor, and a volatile refrigerant in said primary system, said refrigerant having an affinity for the oil in said casing, said refrigerating apparatus also including a secondary refrigerant circuit having a heat-absorbing portion and a heat-rejecting portion in intimate heat-exchange relationship with at least a portion of said second evaporator, said tube of the primary system communicating with an upper portion of said second evaporator, said passageway of the primary system being arranged to prevent drainage of refrigerant liquid from said second evaporator to said first evaporator when said thermostat stops said compressor.

2,421,776. FILTER DEVICE. Lewis L. Dollinger, Rochester, N. Y., assignor to Stayner Filter Corp., Rochester, N. Y., a corporation of New York. Application March 24, 1943, Serial No. 480,395. 2 Claims. (Cl. 183-65.)

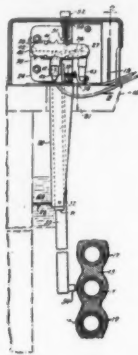


1. In a filter, a housing provided with an inlet and with an outlet, a bell-shaped deflector having its closed end mounted in spaced relation with respect to the inlet and with its open end directed toward said outlet, a porous conical diaphragm having the base thereof in peripheral engagement with the margin of said deflector and having its apex directed toward the deflector to define therewith a closed compartment, said diaphragm being mounted coaxially of said deflector, a hollow filter unit having radiating fins mounted in said deflector coaxially therewith between the conical diaphragm and the closed end of the deflector, and tubular means connecting the interior of the filter unit with said outlet.

2,421,819. DEVICE FOR REGULATING THE THICKNESS OF ICE FORMATIONS ON EVAPORATOR COILS. Clarence E. Vandenberg, Blue Island, Ill., assignor to International Harvester Co., a corporation of New Jersey. Application June 10, 1942, Serial No. 446,530. 14 Claims. (Cl. 62-4.)

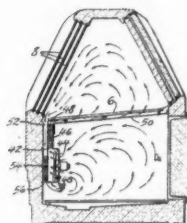
1. The combination with refrigerating apparatus including a compressor, a motor for operating the same, a condenser and an evaporator in circuit with said compressor and said condenser, of a device for controlling the operation of said

apparatus to limit the size of ice formations on said evaporator; said device comprising a contactor adapted to move repeatedly to and from a predetermined



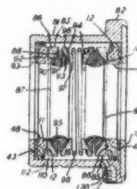
position to be reached by ice forming on the surface of said evaporator, a movable carrier for the contactor, means for moving the carrier to move the contactor repeatedly to and from the said predetermined position, means resiliently connecting the contactor and the carrier to permit relative movement therebetween upon contact of the contactor with an ice formation projecting from said surface to the said predetermined position, and means actuated by relative movement between the carrier and contactor to stop operation of the carrier-moving means and to stop the operation of said motor.

2,421,896. REFRIGERATED DISPLAY CASE. Malcolm D. MacMaster, Woodside, Pa., assignor to C. V. Hill & Co., Inc., Trenton, N. J., a corporation of New Jersey. Application Sept. 13, 1944, Serial No. 554,678. 11 Claims. (Cl. 62-89.5.)



1. In a refrigerated display case having an upper display chamber and a lower storage chamber, means for cooling and circulating air through both of said chambers, comprising a refrigerating coil associated with the display chamber, another refrigerating coil associated with the storage chamber, and means for forcing air over one of said coils and into the chamber with which that coil is associated and thence over the other coil and then into the chamber with which the other coil is associated.

2,422,007. ROTARY SEAL MEMBER. Walter Gilbert, Sr., Johnstown, Pa., assignor to Syntro Corp., Homer City, Pa., a corporation of Delaware. Application Sept. 4, 1943, Serial No. 501,272. 7 Claims. (Cl. 286-7.)



1. In a seal the combination of a member having an opening therethrough, a second member disposed in said opening, said members being relatively rotatable, an annular chamber in one member which is substantially closed by the other member, means providing a radially disposed annular sealing surface at each end of the chamber, a pair of spaced rings in the chamber each having a complementary sealing surface arranged to engage and seal on their respective sealing surfaces at the ends of the chamber, a rubber sleeve having end faces and interposed between said rings, a radially disposed circumferential groove extending a substantial distance into the body of the sleeve which when free forms outwardly projecting flanges and opening into said chamber, a frusto-conical face on at least one ring adjacent the sleeve, and means to urge the sleeve and rings into engagement with the frusto-conical surface deforming the adjacent flange without substantial axial contraction of the sleeve and forcing the end faces of the sleeve

into mating sealing engagement with the rings and cause the body of the sleeve to grip and seal on the member that closes the chamber preventing relative rotary motion between the sleeve and said member, and to exert pressure on the sealing surfaces, the frusto-conical face forming an acute angle relative to the gripped member.

PATENTS DEDICATED TO THE PUBLIC

AIR CONDITIONING—Group 35-34
The following patents owned by the Auditorium Conditioning Corp., a corporation of New Jersey, having a regular and established place of business at New York, N. Y., have been dedicated to the people of the United States of America by instrument recorded in the United States Patent Office.

The instrument reads in part as follows: "I, the undersigned, do hereby assign, transfer and dedicate to the people of the United States of America, all its rights, title and interest in, to and under the said inventions and Letters Patent for their free use thereof."

Re. 17,998. METHOD AND MEANS FOR REDUCING TEMPERATURE BY DEHYDRATION.

Re. 18,831. METHOD OF COOLING AND DRYING AIR.

Re. 20,069. METHOD AND APPARATUS FOR CONDITIONING AIR.

Re. 20,944. AIR CONDITIONING.

Re. 21,946. METHOD FOR CONDITIONING AIR.

Pat. 1,817,384. VENTILATING AND AIR CONDITIONING METHOD AND SYSTEM FOR INCLOSURES.

Pat. 1,840,565. METHOD OF AND APPARATUS FOR CONTROLLING TEMPERATURE AND HUMIDITY.

Pat. 1,863,576. APPARATUS AND METHOD OF AIR CONDITIONING.

Pat. 1,863,578. APPARATUS AND METHOD OF AIR CONDITIONING.

Pat. 1,863,579. METHOD AND APPARATUS OF AIR CONDITIONING.

Pat. 1,846,875. AIR CONDITIONING.

Pat. 1,895,444. HEATING, VENTILATING, AND AIR CONDITIONING.

Pat. 1,902,563. APPARATUS FOR CONDITIONING INCLOSURES.

Pat. 1,955,406. APPARATUS FOR CONTROLLING HUMIDITY.

Pat. 1,977,315. METHOD OF VENTILATING AND PROVIDING DESIRED ATMOSPHERIC CONDITIONS IN INCLOSURES.

Pat. 1,983,023. METHOD AND APPARATUS FOR VENTILATION.

Pat. 2,009,529. AIR CONDITIONING APPARATUS AND CONTROL THEREFOR.

Pat. 2,105,692. AIR CONDITIONING APPARATUS.

Pat. 2,110,203. AIR CONDITIONING SYSTEM.

Pat. 2,110,164. AIR CONDITIONING.

Pat. 2,131,725. METHOD AND SYSTEM FOR TREATING AIR OR OTHER FLUIDS.

Pat. 2,150,505. AIR CONDITIONER.

Pat. 2,202,946. AIR CONDITIONING SYSTEM.

Pat. 2,112,685. METHOD OF AND APPARATUS FOR VENTILATING.

Pat. 2,123,742. AIR CONDITIONING.

Pat. 2,213,350. AIR CONDITIONING APPARATUS.

Pat. 2,249,856. AIR CONDITIONING.

Pat. 2,259,780. AIR CONDITIONING APPARATUS.

The 29 patents listed above relate to methods and apparatus for conditioning air.

A brief description of the above patents will be included in the "Supplement No. 2 to Dedicated Patents" to be published about July 5, 1947.

Copies of the supplement will be mailed upon request to the Commissioner of Patents.

CLASSIFIED ADVERTISING

RATES for "Positions Wanted" \$2.50 per insertion. Limit 50 words.

RATES for all other classifications \$5.00 per insertion. Limit 50 words.

ADVERTISEMENTS set in usual classified style. Box addresses count as five words, other addresses by actual word count.

POSITIONS WANTED

MANUFACTURERS & DISTRIBUTORS: Do you want active, effective, and profitable representation of your air conditioning, refrigeration, and heating products in Southwest Texas by an experienced sales engineer? If so, send details of your offer or proposition together with catalogues. BOX 2503 Air Conditioning & Refrigeration News.

POSITIONS AVAILABLE

APPLICATION—ENGINEER wanted. College graduate having knowledge of refrigeration and air conditioning principles. Experience desirable, but will consider trainee. Reply in own handwriting giving full details of experience, education, and salary desired. Address reply to ACME INDUSTRIES, INC., 618 N. Mechanic Street, Jackson, Michigan, Attention Personnel Manager.

SALES MANAGER—Los Angeles distributor for leading line of self-contained air conditioning units and central plants has attractive opening for experienced sales manager of proven ability to handle air conditioning division. Give full particulars when answering. HUGH ROBINSON & SONS, P. O. Box 152, Vernon Station, Los Angeles 11, California.

AIR CONDITIONING and refrigeration service mechanics wanted for "year round" work—must be experienced in servicing Chrysler Airtemp equipment. Two dollars and fifteen cents per hour. SMITH & LOWMAN, INC., 13 Garfield Place, Cincinnati 2, Ohio. Phone MA. 5698.

SALESMEN: CALLING on refrigeration service shops can add substantially to their income by selling Taylor beer control systems. We train you, supply catalogs and national advertising. Commission basis. TAYLOR, PRECISION MFG. CO., 1299 Parsons Ct., Rocky River 16, Ohio.

SALES ENGINEER—college graduate must have complete knowledge and experience in air conditioning and refrigeration. Experience must include actual installation, estimate, and sales. Written applications giving full details as to experience, age, salary, etc. BOX 2459 Air Conditioning & Refrigeration News.

FACTORY REQUIRES salesmen and factory representatives, who will sell nationally advertised quality line commercial refrigeration to dealers throughout the United States. Preferably on a commission basis. Shipment can be made at once. No inventory required. Write full particulars. BOX 2470 Air Conditioning & Refrigeration News.

DEVELOPMENT ENGINEER—nationally known manufacturer has an opening for a man to do special development work on major electrical appliances. Must have engineering degree, proven ability in developing utility features in home appliances and some experience on refrigerator cabinet design. Write stating full qualifications. BOX 2477 Air Conditioning & Refrigeration News.

WANTED—SALESMAN for finned tubing, high and low fin for Eastern states and Middle West. State qualifications and experience in refrigeration and air conditioning field. BOX 2486 Air Conditioning & Refrigeration News.

SALES ENGINEER—College graduate. Must have license. Mechanical or refrigeration engineer. Experienced in ammonia—"Freon" air conditioning and refrigeration. Northwestern Pennsylvania territory. BOX 2492 Air Conditioning & Refrigeration News.

REFRIGERATION ENGINEER—minimum 5 years practical experience, refrigeration design and coil application on commercial refrigerators. Capable taking charge servicing and installations on commercial refrigerators. Opportunity with progressive, growing manufacturer commercial refrigerators. Philadelphia. Permanent position, advancements based on ability. State education, employment record, age, salary desired. BOX 2493 Air Conditioning & Refrigeration News.

WANTED—PRODUCTION engineer experienced on refrigerated cabinets. Must

have practical experience in sheet metal production, design, welding, assembling, and finishing. New factory central states. Advise experience and salary expected. BOX 2494 Air Conditioning & Refrigeration News.

JUNIOR SALESMAN, to represent rapidly expanding mid-west manufacturer. Must be graduate engineer. Prefer single man with commercial refrigeration experience. Position offers excellent future. Give full particulars in reply. BOX 2496 Air Conditioning & Refrigeration News.

SALES ENGINEER—Air conditioning or refrigeration—for sunny Southern California. This is an opportunity for man of proven ability and experience in this fast growing industrial area where there is no "off season" in air conditioning or refrigeration. BOX 2498 Air Conditioning & Refrigeration News.

WANTED IMMEDIATELY by New York City Export Division of large refrigeration and air conditioning equipment manufacturers for drawing room. 1 squad leader, 2 senior draftsmen, experienced only. State experience, age, salary, marital status. BOX 2499 Air Conditioning & Refrigeration News.

IF YOU are an experienced and aggressive refrigeration supply salesman, an opportunity exists for you in Florida. Not a soft job but one affording competent man a very satisfactory income. Give all details including experience, references and reason for changing employment in first letter. BOX 2500 Air Conditioning & Refrigeration News.

RADIO AND refrigerator field service engineer to call on distributors for manufacturer household refrigerators and radios. Midwest and Southern territories open. Extensive traveling. Requires good technical knowledge and pleasing personality. Previous distributor or factory experience desirable. Write fully giving experience, education, salary requirements, marital status. BOX 2501 Air Conditioning & Refrigeration News.

DESIGN AND development engineer wanted by prominent manufacturer of control apparatus. Supervisory position open for man with administrative ability. Engineering education necessary, with experience in refrigeration field highly desirable. Located in Midwest. Write full details including experience, education, salary expected. BOX 2504 Air Conditioning & Refrigeration News.

REGIONAL SALES directors with national manufacturer of self contained air conditioning units, condensing units, coils, etc., for Central, South-Eastern and South-Western territory. Air conditioning background and experience essential. Position covers engineering and sales promotional work with dealers and distributors. Give full particulars with recent snapshot. BOX 2505, Air Conditioning & Refrigeration News.

EQUIPMENT FOR SALE

MOTORS AND condensing units—available at once—1/4-1/2-3/4-1 HP Universal condensing units with or without motors. Special—six hole ice-cream cabinets with 1/4 hp. Copeland units less motors \$225. Also beverage coolers, beer equipment, stainless steel reach-in freezers. ALBROD CORP., 319 West 48th St., New York City 19, CI 6-9100.

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SELLING OUT: used (as is) and rebuilt Frigidaire and Kelvinator condensing units with new s. ph. capacitor motors. Write for list. EDISON COOLING CORP., 310 E. 149th Street, Bronx 51, N. Y.

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section Nesbitt coils type DS-178-19-102; three section Nesbitt coils type WD-8D-88-25-96 LH, three section Nesbitt coils type WD-8D-88-28-102 RH. HUBBARD-LANGE & HECK, INC., Grand Central Terminal, New York 17, N. Y.

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SEALED CROSBY TERMINALS. Installed from the outside in a few minutes without opening the compressor. Corrects leaky terminals on all Crosby "F-12" units. Set of three \$5.25 (Part No. 1020). Installation tool 20¢. Immediate delivery. Money-back guarantee. SEALED UNIT PARTS CO., 3097 Third Ave., New York 56, N. Y.

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Proper Storage Temperature Keeps Apples' Heat-of-Fermentation from Aiding Decay

BERKELEY, Calif.—A carload of apples stored at 32° F. generates enough heat to melt from 75 to 100 pounds of ice daily.

This and other facts supplied by Government experts indicate how proper refrigeration and air circulation during the handling and storage of apples help permit extended sales periods without loss and give the consumer good fruit. The experts' opinions were passed on in condensed form by The Refrigeration Research Foundation here.

Edwin Smith, senior horticulturist for the Department of Agriculture at Wenatchee, Wash., points out that ripening processes generate heat. At 32°, he says, a box of apples generates from 15 to 20 B.t.u. daily and at 40° from 25 to 40 B.t.u. Unless this heat is continuously removed, he notes, it raises the temperature of the fruit.

Heat given off during the cooling-down period is said to vary with the time taken. Over six to eight days, it equals from one-quarter to one-half "field heat."

Heat speeds up the ripening rate of apples and ripening fruit gives off carbon dioxide, water, and volatile products, and uses up oxygen, Mr. Smith goes on. He presents these figures:

"At 30° F. most varieties have their storage life lengthened 25% over 32°; one day at 70° equals 10 days at 30°; three days at 70° shortens 30-degree cold storage life one month.

HIGH TEMPERATURE CUTS LIFE

"The longer apples are stored," Mr. Smith continues, "the shorter their life after removal to high temperatures. Apples apparently in good condition when removed from northwestern storages may reach the consumer in an over-ripe, mealy, and decayed condition. Optimum storage temperatures from the day of harvest conserves a reserve of storage life for transportation and distribution."

According to the horticulturist, temperatures of 30° F. and a relative humidity of about 85% give the best results, with these exceptions: Yellow Newton from Pajaro Valley, Calif., 35 to 38° F. (similar temperatures are recommended for certain eastern varieties); Jonathans, 36 to 38° for first six weeks; and Winesaps, if held in orchard or common storage for several weeks, 36°, with later gradual cooling to lower temperatures.

In further comments on storage behavior of apples, Mr. Smith states that skin punctures, bruises, and microscopic injuries from washing provide points of fungi invasion. Sanitation from tree to packed box reduces infection, he says.

Sanitation in washing, which is stressed as "most important," em-

braces clean solutions and a heavy flow of fresh rinse water, Mr. Smith explains.

"Heating solutions to 140° at night kills spores in tanks," he elaborates. "Add fresh water as the final rinse over fruit at the rate of at least two gallons per box washed."

"Storage before washing reduces susceptibility to injury, if fruit is not held too long. Remove decayed apples before entering washer."

HOW TO CHECK MOLD SPORES

Emphasizing that the riper the fruit, the more susceptible it is to decay, Mr. Smith declares that germination of mold spores is held up or checked at 30 to 32° F. Internal breakdown in Jonathans, he adds, follows picking when over-mature and storage at high temperatures.

He recommends these measures to prevent apple scald: Picking at optimum maturity, aeration in storage, storage air purification, use of oiled wraps, and pre-storage conditioning. Soft scald—most frequently seen in Jonathans—is a low-temperature disorder controlled by the adjustment of storage temperatures to picking and handling procedures, he has found.

Water core disappearance, Mr. Smith says, is associated with ripening—not with relative humidity in storage. He cautions that fruit with water core is not suitable for late storage because the tissue is subject to breakdown.

Mr. Smith makes these points regarding what he considers important operational factors:

"Fruit exposed to rain or snow in the orchard is subject to arsenic burn and decay invasion."

"Fruit delivered in the cool of the day at 55° F. requires removal of 41,600 B.t.u. field heat per ton against 86,400 B.t.u. when received at 80° with about 25% less heat of respiration."

"Rapid cooling reduces the refrigeration load; if the heat of respiration in a ton of fruit cooled in three days is 8,000 B.t.u., it will be 27,000 B.t.u. if cooling takes place over 10 days."

"Uniformity of temperatures: Core temperature differences of 2 to 3° until March gave a three-pound difference in firmness of Delicious—and a difference between fairly good and poor dessert quality to the consumer."

"Spacing boxes resulted in 2 to 3° lower core temperatures during storage. By March, average pressure test of Delicious in the box next to a space was 14.6 pounds; in a box once removed it was 11.6 pounds."

"Stacking boxes directly on ground floors will result in variation of core temperatures. Close stacking on pallets will result in slow cooling and in variation of core temperatures. Balanced circulation is necessary for uniform core temperatures. . . .

It Pays To Be Early--Even at a Picnic



Although 300 servicemen and guests were on hand, it required several hours to get the draft beer cooler in working order at the annual picnic of Refrigeration Contractors Association of Detroit. Among the "early birds" who enjoyed cold bottled beer were Fred Bolton, executive secretary of the Detroit group, James E. Perry, president, and Gerald Weston, executive vice president of the National Association of Refrigeration Contractors.

"Segregation of storage stocks: Segregate fruit that is over-mature, delayed in the orchard, slowly cooled, or that is in any way susceptible to early breakdown and decay for marketing early in the season. Segregate apples susceptible to soft scald (Jonathan, delayed-Rome Beauty, Golden Delicious, or Winesaps) for initial storage at 36 to 38°; do not subject this fruit suddenly to low temperatures unless given pre-storage conditioning in 25% carbon dioxide for 24 hours."

PREVENTING MOLD GROWTH

"Whitewashing walls is a good preventive against mold growth."

Listing rules for guidance in fruit storage construction and operation, William V. Hukill, Sr., agricultural engineer for the Department of Agriculture at Ames, Iowa, recommends a refrigeration capacity of six to eight tons for each 1,000 boxes per day. Air volume required is given as 1,000 cu. ft. per minute for each ton of refrigeration capacity.

Air temperature will rise, he says, about 10° F. during circulation. It may be necessary to circulate more air in order to cool fresh fruit quickly, he notes.

Mr. Hukill presents these other pointers:

Reduction of all apples to storage temperature in a room within a week is good operation.

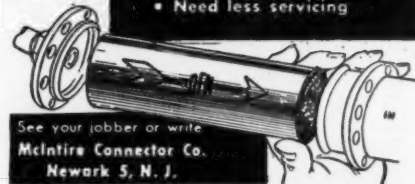
Reversal of direction of air flow occasionally helps in problems of difficult distribution.

One of a few temperature readings taken in a room may be misleading; temperature may vary in numerous places.

Circulating air through cold brine may remove moisture from air, rather than increasing humidity.

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BULLETIN!

AIR CONDITIONING & REFRIGERATION NEWS announces the first subscription rate change in over ten years. Effective October 1, 1947, the basic subscription rates will be as follows:

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AIR CONDITIONING & REFRIGERATION NEWS, 450 W. FORT ST., DETROIT 26, MICH.

Locker Show Set To Open Sept. 22--

(Concluded from Page 1, Column 5)
of F.F.L.I., will discuss the group's work on locker plant standards; plaques will be awarded to the oldest locker manager and the oldest patron, and Keith J. Bauder, public relations director of N.F.F.L.A., will discuss "The Public Relations Program."

In the afternoon from 2 to 4 the first locker clinic sessions will be held. These same clinics are likewise scheduled to be repeated on Wednesday and Thursday afternoons at the same times and places. Topics and directors are:

"Meat Cutting" by K. F. Warner, senior meat specialist, U. S. Department of Agriculture; "Packaging" by Prof. James D. Winter, University of Minnesota; "Slaughtering" by Prof. Roy W. Snyder, extension meat specialist, Texas A. & M.; "Smoking and Curing" by Prof. Dan E. Brady, department of animal husbandry, State College, Raleigh, N. C.

"Poultry Processing" by Mrs. Ray G. Purnell; "Merchandising" by John D. Trullinger, locker plant operator; "Advertising" by Geo. R. Schiemer, secretary of N.F.F.L.A. public relations, and "Construction" by F.F.L.I., are also scheduled as clinics.

Wednesday morning's session will be devoted to association business and the election of officers, and at 8 o'clock Wednesday evening music and entertainment are planned at the Music Hall.

Final session of the N.F.F.L.A. group Thursday morning includes a round table discussion on the merchandising of frozen foods, a radio broadcast, and a talk on the "Ever Normal Refrigerator" by Karl Butler, director of research cooperative G.L.F., Ithaca, N. Y.

In addition to directing the exhibition, the Frozen Food Locker Institute has scheduled several events, all at the Muehlebach hotel. At 2:30 p.m. Sunday present board members will meet. All commercial members will meet at 10 a.m. Tuesday for a discussion of current locker industry problems and policies, and at 7:30 p.m. there will be a dinner for past and present directors.

Annual business meeting of the group is planned for 10 a.m. Wednesday, to be followed by a meeting of the new board of directors at 2:30 p.m. Wednesday.

Complete program for the convention follows:

NATIONAL FROZEN FOOD LOCKER ASSOCIATION

Monday, Sept. 22

Registration all day. Municipal Auditorium.

2 p.m.—Conference of state secretaries. Room 403 Auditorium. J. Manley Card, chairman.

8 p.m.—Opening session. Music Hall, Auditorium. President E. G. Spencer presiding. Musical prelude, community singing. Invocation. Vocal numbers by Mrs. W. H. Hasebroock. Welcome address. Response by Harry Flory. Introduction of executive board members. Outline of convention program by W. H. Hasebroock, treasurer.

Wayne Carver commemoration, Frank Miles conducting.

"The Locker Industry In the World Picture" by Frank Miles, editorial director, *Locker Operator*.

Tuesday, Sept. 23

9:45 a.m.—Music Hall. Keith J. Bauder presiding. News and announcements. Awards to oldest operator and patron. Book of standards discussed by Larry Warner, F.F.L.I. president. Introduction of locker clinic directors.

"The Public Relations Program" by Keith J. Bauder.

2 to 4 p.m.—Locker clinics.

Meat cutting—Room 600. K. F. Warner, director.

Packaging—Room 500. Prof. James D. Winter.

Slaughtering—Room 400. Prof. Roy W. Snyder.

Smoking and curing—Room 502. Prof. Dan E. Brady.

Poultry processing—Room 402. Mrs. Ray G. Purnell.

Merchandising—Room 503. John D. Trullinger.

Advertising—Room 404. Geo. R. Schiemer.

Construction—Room 403. Frozen Food Locker Institute.

7 p.m.—National and state officers' meeting. Hotel President.

Wednesday, Sept. 24

9:45 a.m.—Business session. Room 600, Auditorium. Open to delegates and members only. President E. G. Spencer, chairman. Committee reports. Election.

2 to 4 p.m.—Repeat of clinics. Same rooms and leaders.

4 p.m.—Executive board meeting. Room 404. Includes members of 1946, '47, and '48 boards.

8 p.m.—Music and entertainment. Music Hall.

Thursday, Sept. 25

9:45 a.m.—Music Hall. Discussion of frozen foods, merchandising, and home units.

10:15 to 10:45 a.m.—Broadcast over WDAF. Discussion of locker plants and home units.

11 a.m.—"Ever Normal Refrigerator" by Karl Butler.

Discussion of plans for 1948 and introduction of new president.

2 to 4 p.m.—Repeat of locker clinics.

Small Gain Puts Consumer Credit over \$11 Billion

WASHINGTON, D. C.—Consumer credit outstanding passed the \$11 billion mark in July, the Federal Reserve Board has reported.

Increase for the month was less than 1%, however, the board said. The \$90,000,000 gain brought the total outstanding to \$11,060,000,000.

Installment sales credit and installment loans advanced \$142,000,000 during July. Automobile loans went up \$47,000,000 to a total of \$905,000,000. Loans on other items such as refrigerators, washing machines, and furniture, advanced \$13,000,000 to a total of \$1,169,000,000. However, charge accounts showed a seasonal decline of \$95,000,000. Total outstanding at end of July was \$2,792,000,000.

Aldert S. Root, Jr. Named Field Secretary of NCRSA

RALEIGH, N. C.—Aldert S. Root, Jr., is now operating as field secretary of the National Commercial Refrigerator Sales Association for the southeastern territory. From Raleigh, N. C., Mr. Root is a graduate of the University of North Carolina. During World War II he served 16 months overseas and completed his service in the Navy as an executive officer of an LST.



A. S. Root, Jr.

N.Y. Dept. Stores Show 9% Sales Dip In August

NEW YORK CITY—New York and Brooklyn department stores recorded their largest drop in sales for the year during August—9% under August, 1946, the *New York Times* reports.

Department store executives, however, pointed out that sales were extremely high a year ago, having risen 57.2% above those of August, 1945.

The nationwide heat wave, the loss of a selling day, and an American Legion parade late in the month shared the blame for the decline in the eyes of store executives.

Among the individual stores, sales reports ranged from a 2.9% increase to a 25% decrease.



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